

Manufacturers Record

Reg. U. S. Patent Office



MAY, 1936

BALTIMORE, MD.

AMERICA'S FOUNDATION

"Exalt the citizen. As the State is the unit of government he is the unit of the State. Teach him that his home is his castle, and his sovereignty rests beneath his hat. Make him self-respecting, self-reliant and responsible.

Let him lean on the State for nothing that his own arms can do and on the government for nothing that his State can do. Let him cultivate independence to the point of sacrifice, and learn that humble things with unbartered liberty are better than splendors bought with its price.

Let him neither surrender his individuality to government nor merge it with the mob.

Let him stand upright and fearless—a freeman born of freemen, sturdy in his own strength, dowering his family in the sweat of his brow, loving to his State, loyal to his Republic, earnest in his allegiance wherever it rests, but building his altar in the midst of his household gods and shrining in his own heart the uttermost temple of its liberty."

—Henry W. Grady



Deepening and widening the Gulfene River, to prevent floods, this "Caterpillar" Diesel Tractor works with a bulldozer at a fuel cost of less than 12 cents an hour.

The difference between today's and yesterday's tractor power costs is the difference between the "Caterpillar" Diesel Tractor and the gasoline machine. Today, bids are made and contracts won on the savings that "Caterpillar" Diesel operation makes possible—fuel costs cut 60% to 80%, up-keep costs reduced to a record minimum. And the "Caterpillar" Diesel's versatile, heavy-duty engine—and its sure-traction, wear-resistant tracks—make another difference, raising work production, setting new figures for dependability and stamina. Get the whole story of the SHOW-DOWN from your dealer. Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

THESE ARE SHOW-DOWN FACTS:

A contractor on the Florida Canal reports: "Our four 'Caterpillar' Diesel Tractors are moving 48,000 cu. yds. of sand per 6-day week. All are working 24 hours a day, averaging 83 yds. per hour per tractor on a 500-ft. loaded haul up a steep grade, climbing from 30-ft. cuts to dumps 15 or 20 ft. high."

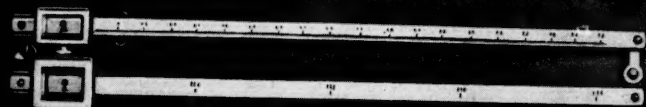
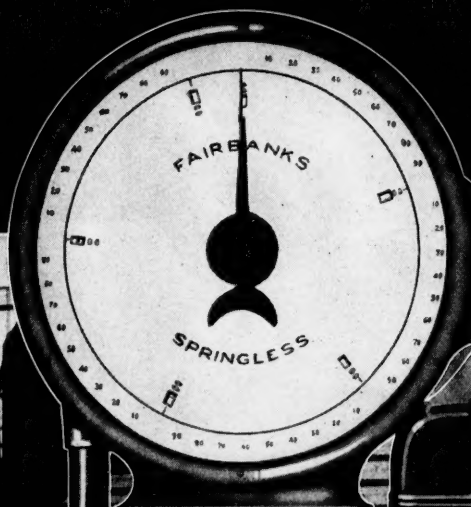
"At an average fuel cost of only 14½ cents per hour," writes a Connecticut owner, "our 'Caterpillar' Diesel Tractor, equipped with bulldozer, has been handling 2500 cu. yds. of fill material per day."

CATERPILLAR

THE MOST

Alert Watchman

YOUR MONEY
CAN HIRE . . .



FAIRBANKS



● Fairbanks Printomatic scales guard your profits by automatically making a printed record of every operation. They stand guard over incoming raw materials, factory operations and final shipping weights. On the job 24 hours a day. They never forget . . . never make mistakes . . . never fail to print accurately.

Printomatics may be purchased outright, or leased. They can also be installed on Fairbanks Dial Scales now in service. Address Department H-31, Fairbanks, Morse & Co., 900 S. Wabash Ave., Chicago, Ill. And 40 principal cities—a service station at each house.

FAIRBANKS



Scales

P R E F E R R E D T H E W O R L D O V E R

6607SA40.31

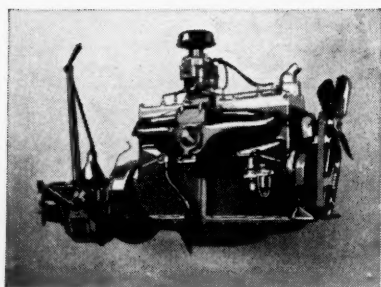
Entered as second-class matter at the postoffice, Baltimore, Md., under the act of March 3, 1879. Volume CV, No. 5 Monthly

MAY NINETEEN THIRTY-SIX

America's Toughest Truck!



GET A TOUGH TRUCK MOTOR FOR TOUGH JOBS



Look to the engine for a truck's real worth! Reo's famed Gold Crown and Silver Crown engines have greater bearing area and larger crankshafts than most trucks of even higher price. That means longer life, less vibration, higher compression—more value for your money! Get the facts.

WHEN the going is tough—or the task difficult—watch fleet owners assign Reo Trucks to the job! Experienced users know they can rely on a Reo *every time* because of the way Reo Truck engines are built.

Reo's great new Gold Crown and Silver Crown engines stand the gaff of the stiffest hauling because they are *truck* engines built for *truck jobs*—not re-designed passenger-car engines! They have greater bearing area and larger crankshafts than most trucks of even higher price. That means longer life, less vibration, higher compression—*more value* for your money. You'll find extra ruggedness—extra stamina at every point of wear.

Streamlined in practical, modern style, the complete Reo Truck line includes models for nearly every hauling need. Optional are 5-speed transmissions, 2-speed rear axles and double-reduction axles that provide high-speed at low cost on the straight-away and extra power when needed.

Make a Reo Truck your next investment and enjoy a new low in trucking costs. Your nearest Reo dealer will explain how a Reo will save you money every month and every year!

Reo Speedwagons and Trucks range from ½ to 4-6 tons. Prices from \$445 up, chassis f. o. b. Lansing, plus tax. *½-Ton Chassis f. o. b. Lansing, plus tax.

\$445*
AND UP

IT PACKS
THE PUNCH
OF A PILE
DRIVER!



REO SPEEDWAGONS AND TRUCKS

MANUFACTURERS RECORD FOR

TABLE OF CONTENTS

**MAY
1936**

Volume CV No. 5



New \$1,600,000 Coal Pier of Norfolk & Western Railway Co.

MANUFACTURERS RECORD

Devoted to the Upbuilding of the
Nation Through the Development
of the South and Southwest as the
Nation's Greatest Material Asset

Published Monthly

by the

**MANUFACTURERS RECORD
PUBLISHING CO.**

Frank Gould, President

Main Office: Manufacturers Record Building, Commerce
and Water Streets, Baltimore, Md.

Branch Offices:

New York—11 W. 42nd St.

Chicago—28 East Jackson Blvd., Room 1510

Subscription Rate: \$2.00 a year (in advance). Single
copies, 25c; back numbers, one to six months, 50c each;
over six months, \$1.00. Combination rate for Manufac-
turers Record and Daily Construction Bulletin, \$10.50
a year.

Subscribers are asked to notify us of change in
address to avoid delay in service.

**PUBLISHERS DAILY CONSTRUCTION BULLETIN AND
BLUE BOOK OF SOUTHERN PROGRESS**

Member
A.B.C.

MAY NINETEEN THIRTY-SIX

EDITORIALS

America's Foundation	Cover Page
Taxes This Year And Next	27
What Are We To Do About Our Highways?	28
Relief and Unemployment	28
Construction Revival	29
Telling The South's Thrilling Story	29

NEWS and FEATURE ARTICLES

Science Blazing New Trails	30-31
Wealth In Southern Forests	By E. L. Kurth 32-33
The Construction Industry Looks Ahead	By A. P. Greensfelder 34-35
Boiler Plant Equipment For Savannah Paper Mill	35
The American Business System	By Robert V. Fleming 36
Modern Bank Policies	By Elbert S. Woosley 37
\$1,600,000 Coal Pier Completed	38-39
South's Leadership In Granite and Marble Industry	By Howard L. Clark 40-41
Pioneering In Rail Transport	42
Complete Large Sugar Warehouse	43
\$311,405,000 In Construction Awards In Four Months.	44
Some Representative Projects In The South Last Month.	46
Southern Newsprint Industry Development	60
Boost Output of High-Carbon Spring Rods and Wire.	66
Developing New Outlets For Cotton.	By C. K. Everett 68
Railroad Buying Picks Up	70
Tung Oil Consumption Gains 70% In Four Years.	72
To Advance Industrial Use of Farm Products.	74

SPECIAL DEPARTMENTS

Iron, Steel and Metal Market	48
Lumber News Of The Month	50
Good Roads and Motor Transport	52
Trade Literature	62
And So It Goes	58-59
Industrial News	64
Index For Buyers	82
Index Of Advertisers	84

The RADIAL CONE Design for Medium Sized Water Tanks

MANY large elevated tanks for municipal service have been built with radial-cone bottoms. The use of this design, however, is not restricted to tanks with capacities of 1, 1½ or 2 million gallons. It can be used equally well to provide a low range in head in tanks the size shown in the accompanying illustration.

The principal advantages of the radial-cone design are as follows:

1. *The range between the upper and lower water levels is low. This reduces the variation in pressure in the distribution system to a minimum.*
2. *The shallow depth of the tank shell reduces the average head against which the pumps must operate and thus cuts operating costs.*
3. *The relatively large diameter and shallow depth of the tank shell gives the structure well-balanced proportions.*

In addition to the above-mentioned advantages, each radial-cone tank installation gives you the normal benefits of elevated storage. Pumping equipment can be operated at a uniform rate to obtain maximum efficiency. A great deal of the requirements for peak periods can be pumped at off-peak periods when pumping costs and power rates are low. Transmission mains carry average pumping instead of peak demands and do not need to be replaced until average demands exceed their capacity. A gravity supply in elevated storage flows into the system without re-pumping.



500,000-gallon radial-cone bottom elevated tank for municipal service. It is 95 feet to bottom and has a range in head of only 25 feet between the upper and lower water levels

Elevated storage also improves the fire protection which a water-works system renders. It provides the heavy draft so necessary when a fire department swings into action. It maintains uniform pressure in the mains, even though the operation of the pumps may be interrupted.

We will appreciate the opportunity of discussing the advantages of elevated storage with water-works engineers and municipal officials. Our nearest office will be glad to tell you if you can use the radial-cone design to advantage or submit quotations on our standard designs to meet your requirements.

CHICAGO BRIDGE & IRON WORKS

Birmingham1530 North Fifth St
Dallas1408 Dallas Athletic Club Bldg.
Houston2919 Main Street
Tulsa1611 Thompson Bldg.

New York3313-165 Broadway Bldg.
Cleveland2216 Rockefeller Bldg.
Chicago2106 Old Colony Bldg.
San Francisco1040 Rialto Bldg.

Philadelphia1619-1700 Walnut Street Bldg.
Detroit1510 Lafayette Bldg.
Boston1510 Consolidated Gas Bldg.
HavanaEdificio Abreu 402

B-448

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PA.



FOR FLOOD REHABILITATION or deferred modernization needs of water and gas distribution systems, sewerage and drainage systems, and industrial piping systems, we offer a complete pipe service and prompt deliveries from our 15 plants and storage yards. Super-deLavaud Pipe —“centrifugally cast in a metal mold *without chill*”—12 and 18-foot lengths, diameters up to 24 inches. Pit cast pipe in diameters up to 84 inches. U. S. Cast Iron Culverts. Threaded cast iron pipe (steel o. d. sizes). U. S. *Ni-Resist* super-corrosive-resistant cast iron pipe. Bell and spigot, mechanical and flexible joints or plain end pipe. Fittings—any size or practicable design.

U.S. cast iron PIPE

Cast iron and alloy cast iron pipe centrifugally or pit cast—for water works, gas, sewerage and drainage service as well as industrial uses involving corrosives.

U. S. PIPE & FOUNDRY CO.
BURLINGTON, NEW JERSEY

Foundries and Sales Offices throughout the U.S.

Where appearance is
a sales point for the
finished product...

TURN

to
**YOUNGSTOWN
GALVANNEALED
SHEETS**

●For articles on which paint, enamel, Duco or lacquer finishes are used....for uses where the protective zinc coating must stand up under severe fabricating conditions....for uses where abrasion or high temperatures must be withstood, without chipping, flaking, loosening or fusing of the zinc coating....you can safely place your trust in YOUNGSTOWN GALVANNEALED SHEETS.

●The zinc coating of Youngstown Galvannealed Sheets is actually fused to the base metal by a patented heat-treating process. No preparatory chemical treatment, priming or weathering is required before applying the surface finish.

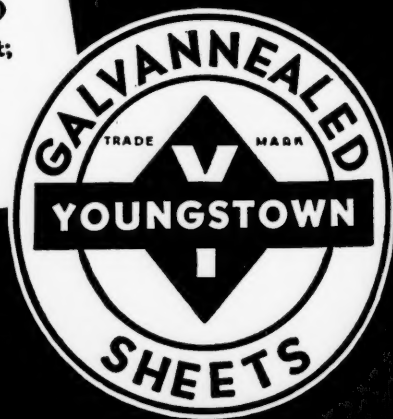
THE YOUNGSTOWN SHEET AND TUBE CO.
Manufacturers of Carbon and Alloy Steels
YOUNGSTOWN, OHIO

General Offices

Tubular Products; Sheets; Plates; Tin Plate; Bars; Rods; Wire; Nails; Conduit;
Unions; Tie Plates and Spikes.

furnished in all standard widths,
lengths and gauges.

597

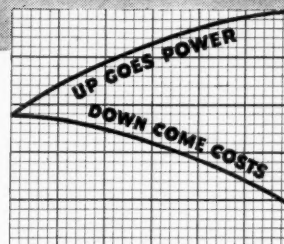


Fleet owner changes to Chevrolet trucks because of their great economy

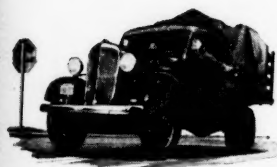


"These 28 Chevrolets are operating at about one-half the expense of the 28 trucks of another make they replaced."

H. H. H. H.
President, Capital Fuel & Feed Co.



FOR ECONOMICAL TRANSPORTATION



NEW PERFECTED HYDRAULIC BRAKES

always equalized for quick, unswerving, "straight line" stops



NEW FULL-TRIMMED DE LUXE CAB

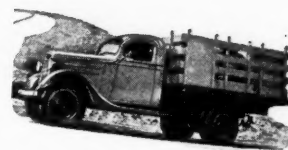
with clear-vision instrument panel for safe control

CAPITAL FUEL & FEED COMPANY of Phoenix, Arizona, Operators of a fleet of seventy-five passenger cars and trucks, is one of hundreds of fleet owners that have discovered the money-saving advantages of Chevrolet equipment. Read the following statement by the president of this company, in which he tells of their remarkable experience with Chevrolet equipment, and why Chevrolet will be their choice when new units are added.

"The deciding factor in the purchase (28 Chevrolet trucks) was the record established by one of your Chevrolet cars which we drove over 150,000 miles with the original pistons, and a cost record unsurpassed for economy by any unit in our fleet. The 28 Chevrolet trucks are used for hauling hay, grain, coal and fuel oil in loads up to 4, 5 and 6 tons, over all kinds of roads and conditions. Considering all expenses, these 28 Chevrolets are operating at about one-half the expense of the 28 trucks of another make which they replaced. From here on we propose to use Chevrolets."

Chevrolet trucks are the world's thriftiest high-powered trucks. They are the most economical of all trucks to maintain, and give the greatest pulling power of any trucks in their price range. Get the facts on your own haulage or delivery requirements. See your Chevrolet dealer at once.

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN



NEW HIGH-COMPRESSION VALVE-IN-HEAD ENGINE

with increased horsepower, increased torque, greater economy in gas and oil



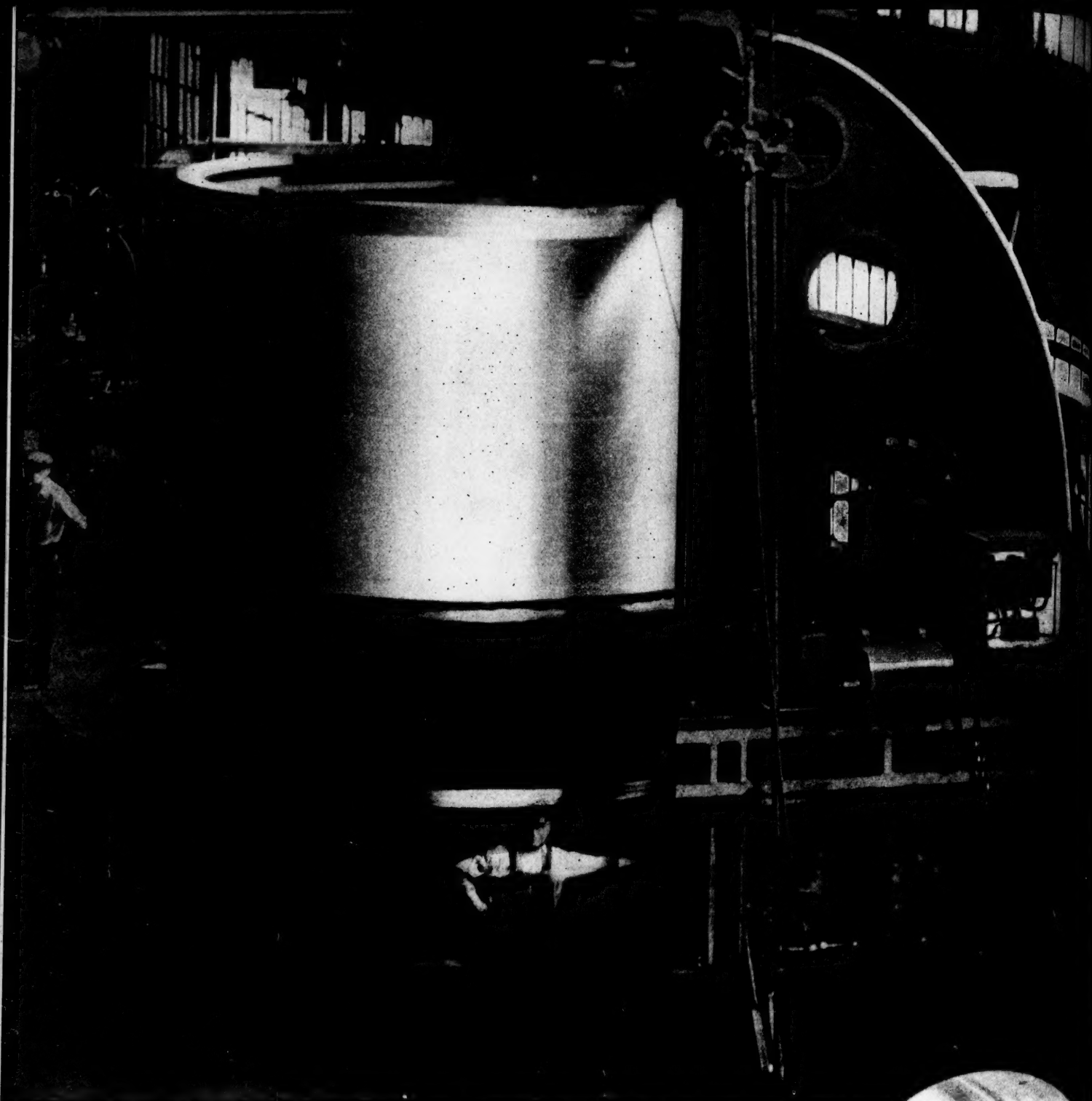
FULL-FLOATING REAR AXLE

with barrel type wheel bearings on 1½-ton models

GENERAL MOTORS INSTALLMENT PLAN—MONTHLY PAYMENTS TO SUIT YOUR PURSE

CHEVROLET TRUCKS

MAY NINETEEN THIRTY-SIX



Yankee Dryer, cast and machined. Dimensions 144 x 198 inches. Weight 40 tons. Made of special Puseyjones alloy.

“ask us”

THE PUSEY AND JONES CORPORATION

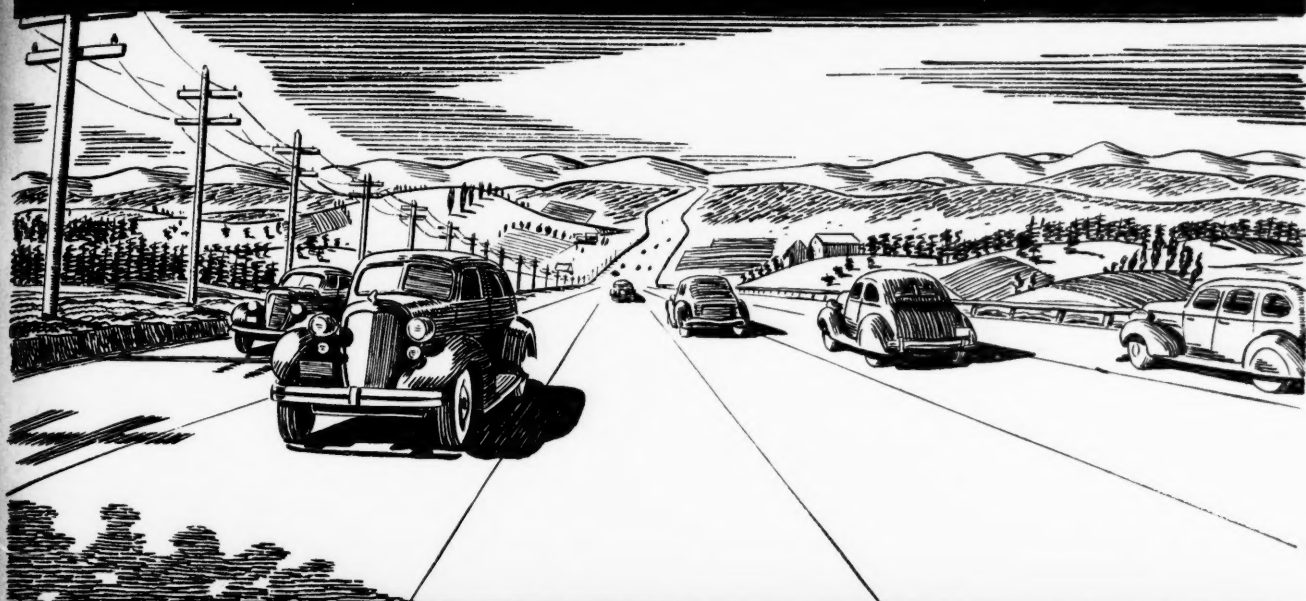
Established 1848. Builders of Paper-making Machinery

[NEWS-PRINT : BOOK PAPER : KRAFT : BOARD]

Wilmington, Delaware, U.S.A.



A Boiler AS WIDE



AS A 6-Lane HIGHWAY

CE PRODUCTS

All types of

BOILERS

STOKERS

FURNACES

**PULVERIZED FUEL
SYSTEMS**

**HEAT RECOVERY
EQUIPMENT**

Fabricators of pressure vessels,
tanks, etc., welded or riveted
in carbon, alloy or clad steels



THINK of a boiler 60 ft wide . . . as high as an eight-story building . . . big enough to accommodate three six-room houses within its furnace . . . and producing so much steam that at full load it consumes nearly 35 tons of coal *each* hour—sufficient to heat an average house for three winters.

A most interesting installation, this huge boiler unit built by Combustion Engineering and recently placed in service at the Port Washington power station of The Milwaukee Electric Railway & Light Company. An installation so dependable that it is relied upon as the sole source of steam supply for the station's 80,000 kw turbine-generator, and such a generator can produce sufficient electricity to meet the light and power requirements of a city of 300,000 population.

You may never need a boiler of such proportions, but you are interested in boiler plant equipment that will supply *your* steam requirements *dependably* and at the *lowest possible cost*. You can assure yourself of this result by specifying CE equipment for your new boiler plant or the extension or modernization of an existing plant.

The CE line of boilers, stokers and related equipment is the most complete in the industry. It provides adequately for all steam production requirements except domestic—from 30 hp boilers and small stokers up to the largest steam generating units. It has the extra values implied by its selection for many of the largest and most notable boiler plant installations of the present day . . . Combustion Engineering Company, Inc., 200 Madison Avenue, New York.

COMBUSTION ENGINEERING

MANUFACTURING DIVISIONS: The Hedges-Walsh-Weidner Company, Chattanooga, Tenn.; The Raymond Brothers Impact Pulverizer Co., Chicago, Ill.; Heine Boiler Company, St. Louis, Mo.; Coshocton Iron Company, Monongahela, Pa.

MAY NINETEEN THIRTY-SIX

A-273

11

The Same *Strength of Character* in Half-Ton and *Big Six-Wheeler* International Trucks

Many of the toughest hauling assignments in the world fall to *International Six-Wheel Trucks*. The contractor knows from experience that he can count on Internationals for power, stamina, and economy. He knows that International service will keep them on the job. Whatever his work—from building a dam to mastering the remotest oilfield—he feels *safe* with Internationals.

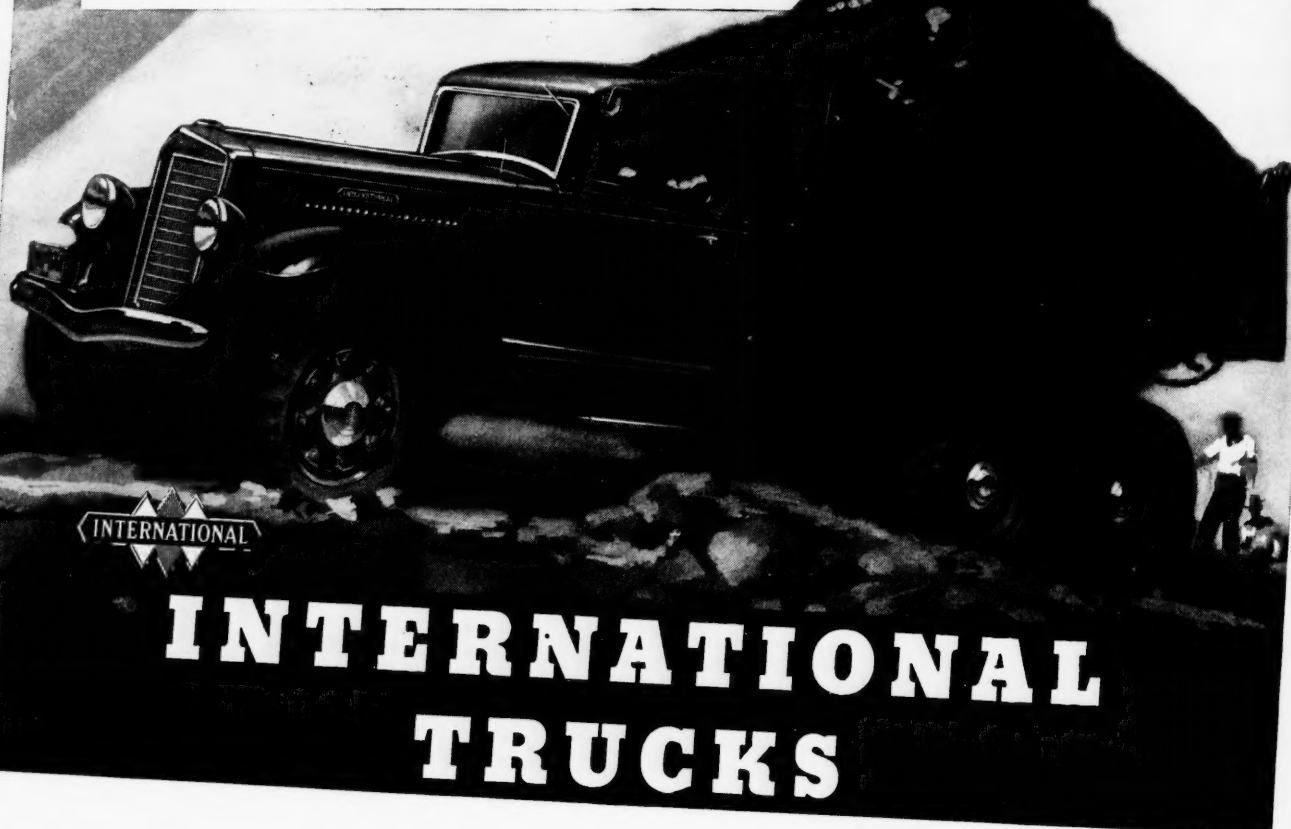
You are in a special class if you use trucks like these, but no matter what your hauling requirements, any Inter-

national will give you *heavy-duty stamina in proportion*. There is *extra* all-truck value in all the 28 International models, down to the Half-Ton chassis priced at \$400 f.o.b. factory.

Write for the 32-page catalog on the International Six-Wheelers—the Half-Ton folder—or information on any intermediate size. The nearest Company-owned branch or International dealer is at your service.

INTERNATIONAL HARVESTER COMPANY
(INCORPORATED)
606 S. Michigan Ave. Chicago, Ill.

Illustration: *International Dual-Drive Six-Wheel Truck, Model C-55-F, maximum carrying capacity 23,000 lbs. International Six-Wheelers, Dual-Drive and Trailing-Axle, range from 11,400 lbs. up. Wheelbase lengths 168 to 244 in., permitting bodies for a wide variety of application.*

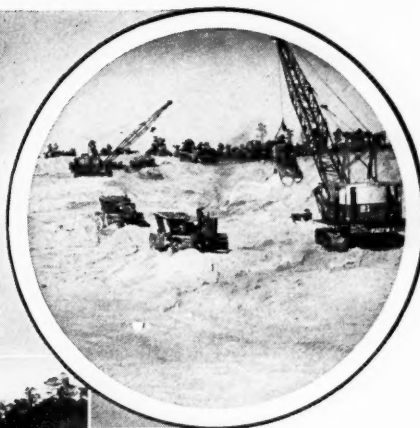


INTERNATIONAL TRUCKS

AT THE GREAT FLORIDA CANAL PROJECT GULF LUBRICANTS

*keep all Equipment in Efficient
Operation 24 HOURS A DAY*

On Benjamin Foster Company Canal Contract



The huge drag line above is loading 10-yd. crawler wagons. The drag line is powered with a Diesel engine and the crawler wagons are pulled by Diesel powered tractors. Gulf lubricants give complete protection under the severe conditions encountered while working in heat, sand and dust.



The Diesel tractors above and left are pulling two different types of scraper wagons. Each of these units moves its yardage a distance of 800 feet in 1 1/2 minutes. After they are loaded, the scrapers are hauled to the spoils bank—the future canal bank—and dumped. The total time for loading, hauling, dumping and return is just five minutes. Proper use of the right Gulf lubricants helps to make possible this highly efficient operation of Diesel equipment and keep it continuously on the job without costly breakdowns or excessive repair expense.

Breakdowns Avoided and Work Kept on Schedule . . . by Using GULF QUALITY LUBRICANTS

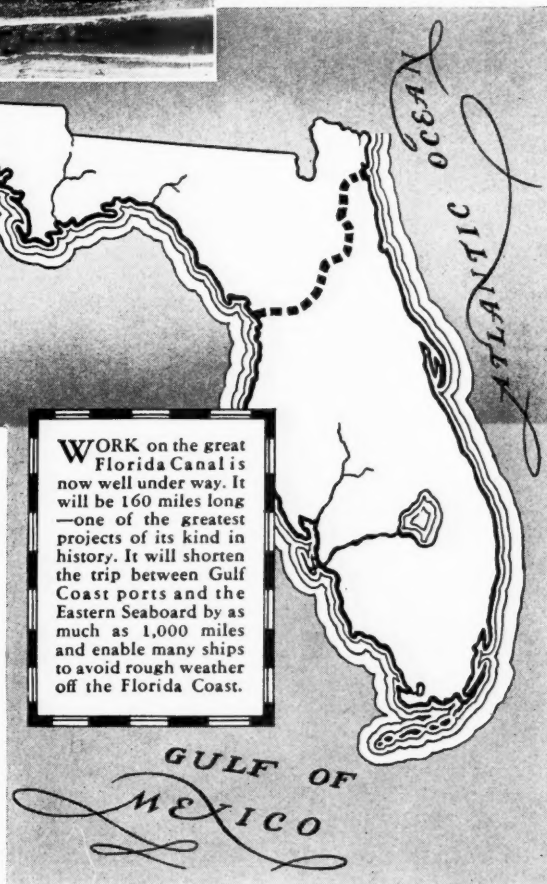
FOUR six hour shifts a day are speeding the work of building the new Florida Canal—a real test for men and machinery.

Each machine is inspected daily and careful attention is given to the proper lubrication of Diesel engines and moving part of all others equipment.

Leading contractors in many sections of the country are keeping their equipment in top-notch operating condition with the aid of Gulf lubricants. They will help you finish your jobs speedily and with a profit.

GULF OIL CORPORATION of Pennsylvania GULF REFINING COMPANY

GENERAL OFFICES, GULF BUILDING, PITTSBURGH, PA.



Makers of That Good Gulf Gasoline and Gulfube Motor Oil

Another new **MARION!**

THE TYPE 39-A DRAGLINE *the BIGGEST* **3 CUBIC YARD MACHINE** *in its PRICE CLASS*



Again Marion leads the field in dragline design and performance. This time with a new and larger machine—the Type 39-A—equipped with an 80 ft. boom—and incorporating Marion's proven clutch features. It meets present day excavating needs with an exceptionally wide working range and a material handling capacity of 2,000 cubic yards per eight-hour shift. These machines are now establishing yardage records in the field. Write for complete information.



THE MARION **TYPE 39-A DRAGLINE** *offers THESE OUTSTANDING* **FEATURES**

- Large, wide-spread crawlers providing very low ground pressure.
- Hook rollers to relieve center pin stress.
- Anti-friction bearings throughout.
- Lower and upper frames of all-welded construction.
- Fuel oil, gasoline or electric power.

THE MARION STEAM SHOVEL CO., MARION, OHIO, U. S. A.

SHOVELS • CRANES • DRAGLINES • TRENCH SHOVELS • STEAM • GAS • DIESEL • ELECTRIC • DIESEL ELECTRIC • GAS ELECTRIC
• **AN EXCAVATOR FOR EVERY MATERIAL HANDLING JOB** •

Roebling...

*The pacemaker in
wire rope development*



THE most exacting basis for judging wire rope performance is AVERAGE SERVICE.

This is the basis advocated by Roebling, in which rope cost per ton of material handled, or per other unit of service measurement, is based not on the service of a single rope but on the average service of several ropes.

John A. Roebling's Sons Co.,
Trenton New Jersey

© IRVING BROWNING



JAMES RIVER BRIDGE, NEWPORT NEWS, VA.



COCHRANE BRIDGE OVER MOBILE BAY, MOBILE, ALA.



SAN FRANCISCO BAY BRIDGE, SAN FRANCISCO, CAL.



EVERETT-MARYSVILLE BRIDGE, NEAR SEATTLE, WASH.

Weight and Counterweight

WITH each Vertical Lift Span there are two counterweights, one at each end to counterbalance the weight of the lift span as it raises up and down. Sheaves, cables, gears and motors properly coordinated and synchronized permit easy operation and lifting of hundreds of tons of weight.

We have built in the past twenty years or more a great many vertical lift bridges throughout the country. This is only one of the many kinds of steel work, both bridges and buildings which we do. But it is probably the most exacting to be found. And its successful handling indicates a thoroughly capable organization to which may be safely intrusted all problems of steel design and construction.

Let us furnish you designs and estimates on your steel needs whether they are large or small. If you have not decided to use steel, let us show you its advantages and economies. No obligation is involved.

VIRGINIA BRIDGE COMPANY

Roanoke	Birmingham	Memphis	Atlanta	New York
Los Angeles	Charlotte	Austin	El Paso	

VIRGINIA BRIDGE STEEL STRUCTURES

James River Bridge: More than 5 miles long and crosses the historic James River just above its mouth at Newport News. The engineers were J. E. Greiner Company, Baltimore, Md., and Turner Construction Co., New York, general contractors.

Cochrane Bridge, over Mobile Bay: This Lift Span is 325 feet long and raises to a clear height of 135 feet above water. Harrington, Howard & Ash, Kansas City, Mo., were engineers and Kansas City Bridge Co., Kansas City, General Contractors.

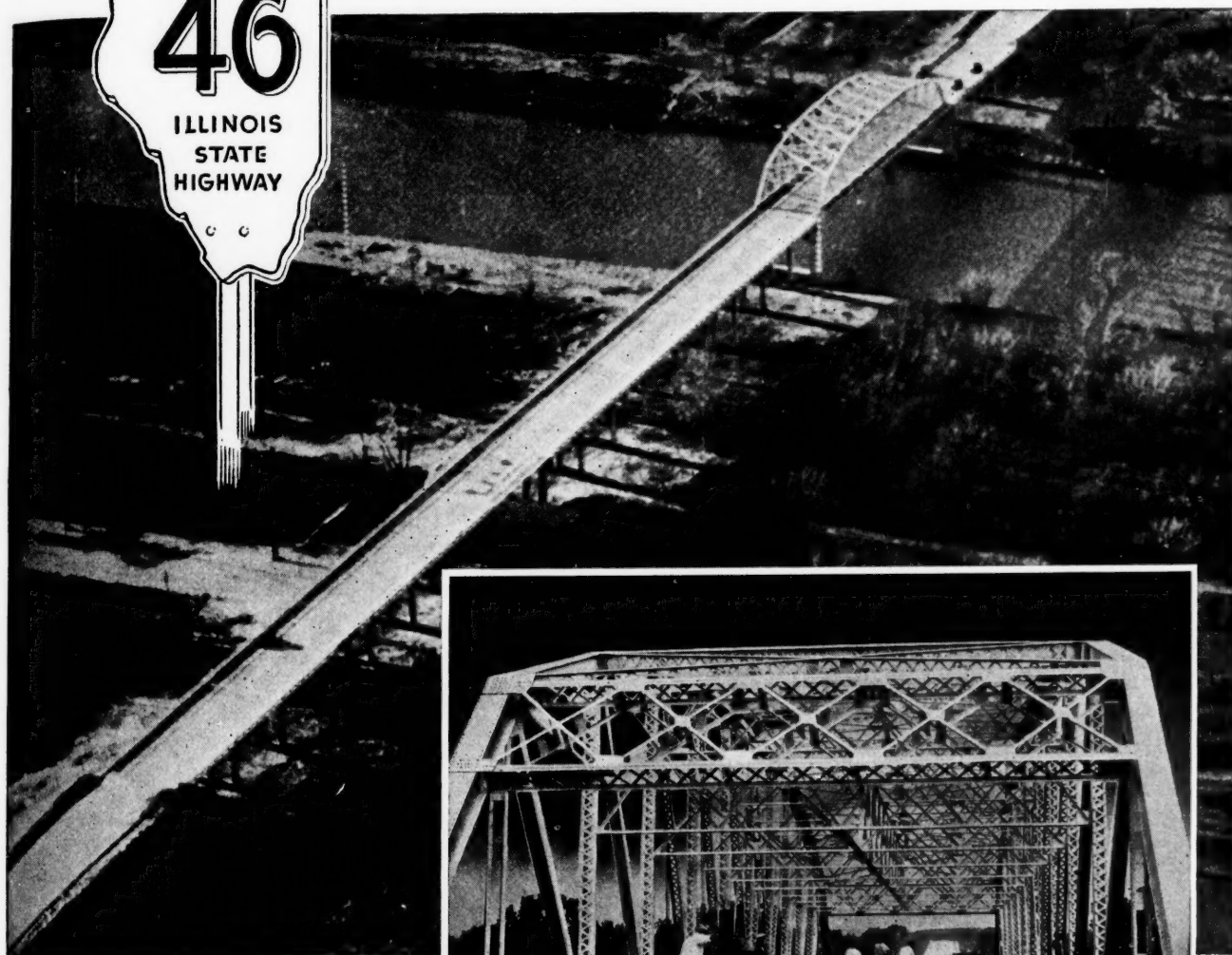
San Francisco Bay Bridge: One of the longest highway bridges in the world, 7 miles in length. Waddell & Hardesty, New York, Engineers, and Raymond Concrete Pile Co., New York, General Contractors. View shows lift span being floated into place by our erection forces.

Everett-Marysville Bridge: An important highway bridge hook-up by the State of Washington, on which we furnished a number of fixed spans, 2 swing spans and a vertical lift. J. A. McEachern Co., Seattle, were General Contractors on the entire project. Waddell & Hardesty were Engineers on the lift span.

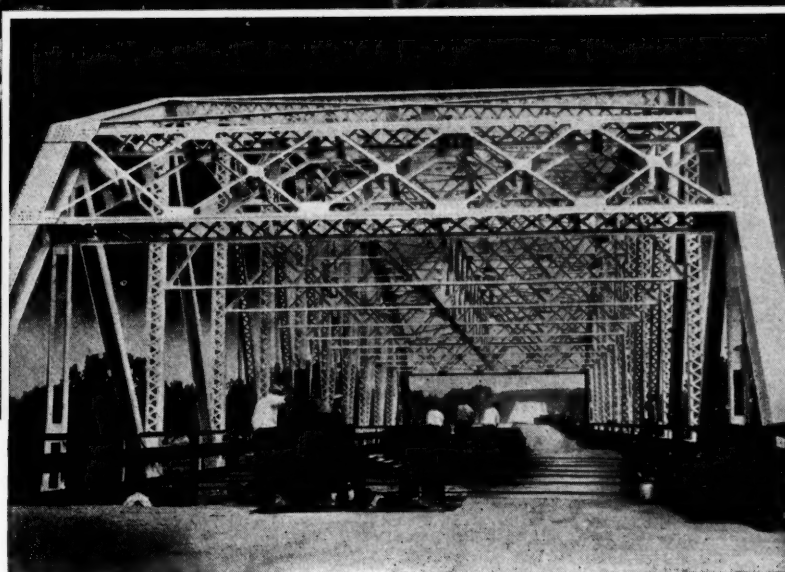
MANUFACTURERS RECORD FOR



Spans Canal and Railroad



(Above)—Mannheim Road Viaduct built for the State of Illinois, Department of Public Works and Buildings, Division of Highways—Ernest Lieberman, Chief Highway Engineer.



(Above)—The 262 foot through truss span over the Canal has a roadway of asphalt plank supported on a welded steel plate deck; the beam spans have a concrete slab roadway.

A 262 foot truss and 19 deck beam spans carry the 44 foot roadway and 5 foot sidewalk of Route 46 across the Sanitary District Canal and over the Alton Railroad at Justice, Ill. This structure, approximately 1200 feet in length, is typical of others projected by the Illinois Division of

Highways in an extensive program of highway improvements throughout the State.

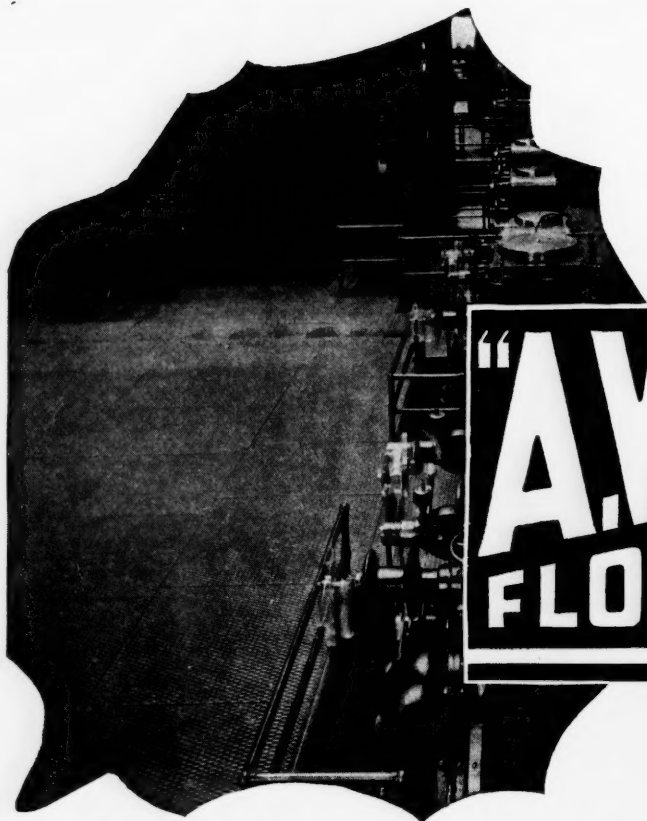
All structural steelwork for this bridge was fabricated by American Bridge Company from rolled steel structural shapes supplied by the Carnegie-Illinois Steel Corporation.

AMERICAN BRIDGE COMPANY, Pittsburgh, Pa.; CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh, Pa., Chicago, Ill.; TENNESSEE COAL, IRON & RAILROAD COMPANY, Birmingham, Ala.

Pacific Coast Distributors: Columbia Steel Co., San Francisco
Export Distributors: United States Steel Products Co., New York City



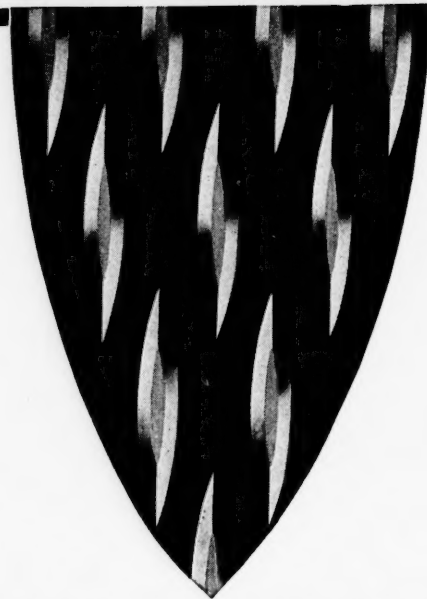
UNITED STATES STEEL



An installation of "A.W." Rolled Steel Floor Plate in the Philadelphia Electric Power Plant.

"A.W." ROLLED STEEL FLOOR PLATE

Diamondette pattern shown actual size.



LOW FIRST COST—NO MAINTENANCE COST

Quick installation without disturbing men or production. Cut to any required shape. Slip proof, oil proof, heat proof, crack proof. Toughest traffic can't damage or impair it. PERMANENT. Immediate delivery, in various patterns to meet all requirements.

OTHER "A.W." QUALITY PRODUCTS

Blue Annealed Sheets & Strip

Sheared Steel Plates

Billets, Blooms & Slabs

"A.W." "70-90" Super Strength Steel

Available in Super-Diamond, Diamond, Diamondette and other patterns to meet any condition. Immediate deliveries.

ALAN WOOD STEEL COMPANY CONSHOHOCKEN, PA.

BRANCHES: Philadelphia, Pa., Fidelity-Philadelphia Trust Bldg.; New York, N. Y., 60 E. 42nd St.; Boston, Mass., 250 Stuart St.; Los Angeles, Cal., 620 W. M. Garland Bldg.; San Francisco, Cal., 444 Market St.; Seattle, Wash., Rhodes Haverly Bldg.; Houston, Texas, 110 Byrne St.

REPRESENTATIVES: Buffalo, F. E. Allen, Inc.; Pittsburgh, C. C. Poling Co.; Detroit, G. C. Davies Co.; Cleveland, J. F. Corlett & Co.; Chicago, A. M. Castle & Co.; Cincinnati, J. F. Corlett & Co.; New Orleans, Jones & Laughlin Steel Corp.; Birmingham, J. H. Scruggs Co.; Minneapolis, R. E. Deutsche Co.; Memphis, E. E. Hunt, 581 West Drive; Montreal, A. C. Leslie & Co.



110 YEARS' IRON- AND STEEL-MAKING EXPERIENCE

AMERICAN TIGER BRAND

keeps an Eye on Costs



NO matter where you are — or what job you ask wire rope to do — you'll find that American Tiger Brand Wire Rope has a reputation for long life and dependability.



Our engineers have studied every angle of the problems you're up against and they have designed a type and size of rope

for every need. Just remember that you can save money with American Tiger Brand Wire Rope.

AMERICAN STEEL & WIRE COMPANY

208 South La Salle Street, Chicago
Empire State Building, New York

COLUMBIA STEEL COMPANY

Russ Building • San Francisco

United States Steel Products Company, New York,
Export Distributors

UNITED STATES STEEL

Burroughs

SIMPLIFIES PAYROLL ACCOUNTING *and gives you the additional information required by the* **SOCIAL SECURITY ACT**

While you are considering how best to handle your payroll and earnings records in order to meet the provisions of the Federal Social Security Act and related legislation—investigate these new Burroughs developments in the complete line of Burroughs bookkeeping and accounting machines. They make it possible to select exactly the equipment you need to enable you to handle your payroll and earnings records with exceptional speed, ease and economy.

Here is a typical comment: "Our new Burroughs equipment is not only an easy solution to the accounting problems set up by the Federal Social Security Act, but we are actually handling all our labor accounting, including the extra work, at a lower cost than before." Another typical comment: "We are glad the Social Security Act prompted us to investigate because we now have the complete payroll accounting system we have needed for a long time."

To find out how Burroughs can assist you to meet your own problem with the minimum change in equipment, and at the lowest possible accounting cost, telephone the local Burroughs office. Or, if more convenient, mail the coupon below.

MAIL THIS COUPON TODAY!

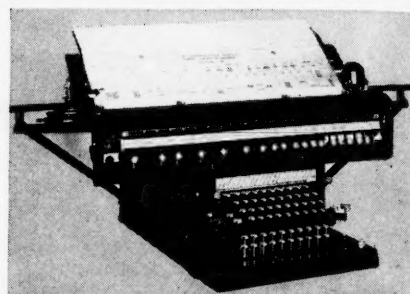
Burroughs Adding Machine Company
6114 Second Boulevard, Detroit, Michigan

Send me the new folder, "Modern Payroll Methods"—which includes illustrations of forms for compiling figures required by the Federal Social Security Act.

Name _____

Address _____

NEW MACHINES FOR PAYROLL ACCOUNTING



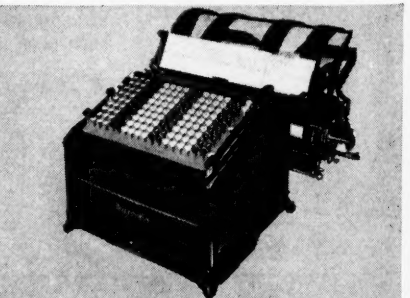
Burroughs Typewriter Payroll Accounting Machine writes check, earnings record, employee's statement and payroll summary in one operation. Column selection automatically controlled. All totals accumulated.



Burroughs Desk Bookkeeping Machine posts earnings records, automatically prints dates in proper columns, automatically subtracts deductions—calculates net pay.



Burroughs Electric Carriage Check-Writing Typewriter writes payroll checks either in units or in strips. Payroll summary completed at same operation. Fast and easy insertion and removal of checks.



Burroughs Automatic Payroll Machine writes check, employee's earnings statement, earnings record and payroll summary in one operation. Accumulates all necessary totals, automatically ejects and stacks checks in order.



the 48 year story of 50,000 executives

... who have learned that workmen's compensation insurance is much more than a necessary evil ... to be renewed without question by executive management.

Perhaps they came to American Mutual because we have paid never less than 20% dividends. But each of them now knows that is only one of three opportunities to profit.

First Is the Profit from Safety Indirect losses of accidents—spoiled work, lost time, etc.—average many times the benefits paid. American Mutual safety engineers plug not only the worst accident leaks by guarding machines, but trace the red thread of danger through each process, worker, and square foot of space ... to replace it with the green thread of safety.

Second Is the Profit from Claim and Medical Service A worker of many years' experience can be lost to the employer forever through medical attention not familiar with industrial injuries. American Mutual, with specialized skill, works to restore injured men to tasks for which they trained.

Third Is the Profit from Dividends American Mutual's record of dividends to policyholders for nearly half a century, is maintained by widely diversified coverage, careful selection of policy-

holders, and conservative handling of investments by New England management.

The Edward G. Budd Manufacturing Co. of Philadelphia, nationally known metal working company, has received dividends totaling \$256,745.03 on workmen's compensation insurance alone during seventeen years with American Mutual.

So great are these profits that workmen's compensation insurance has become the active interest of 50,000 executives ... who would recommend your immediate consideration of American Mutual services.

A few of our Directors and Advisory Board members: George H. Lanier, President, West Point Manufacturing Co.; Spencer Borden, President, Fall River Bleachery; William J. Bailey, President, Clinton Cotton Mills; John H. Cheatham, President, Georgia Kincaid Mills; J. M. Gamewell, Treasurer, Erlanger Mills; Edward W. Swift, President, Muscogee Manufacturing Co.; James E. Millis, President, Adams-Millis Co.; H. P. Meikleham, Agent, Pepperell Manufacturing Co.; and William J. Vereen, President, Moultrie Cotton Mills.

Admitted Assets: \$23,809,545.32 Liabilities: \$19,424,978.69
Surplus to Policyholders: \$4,384,566.63 As of December 31, 1935

Workmen's compensation, automobile, fidelity bonds, elevator, burglary, and other forms of casualty insurance are written by American Mutual; fire insurance by our associate, Allied American Mutual Fire Insurance Company.

A brief booklet, "How 12 Companies Saved More Than A Million Dollars," will be sent upon request.

The Largest Writer of Workmen's Compensation Insurance in the South

AMERICAN MUTUAL LIABILITY INSURANCE COMPANY

Executive Offices: 142 BERKELEY ST., BOSTON, MASS.

BRANCHES IN 53 OF THE COUNTRY'S PRINCIPAL CITIES INCLUDING

ATLANTA, Ga. BIRMINGHAM, Ala. GREENSBORO, N. C. JACKSONVILLE, Fla. MEMPHIS, Tenn. NEW ORLEANS, La.
BALTIMORE, Md. CHARLOTTE, N. C. GREENVILLE, S. C. LOUISVILLE, Ky. NASHVILLE, Tenn. RICHMOND, Va.



Hydraulic Turbines

•

Francis and High Speed Runners

• •

Penstocks—Butterfly Valves—
Power Operated Rack Rakes
—Gates and Gate Hoists
—Electrically Welded Racks

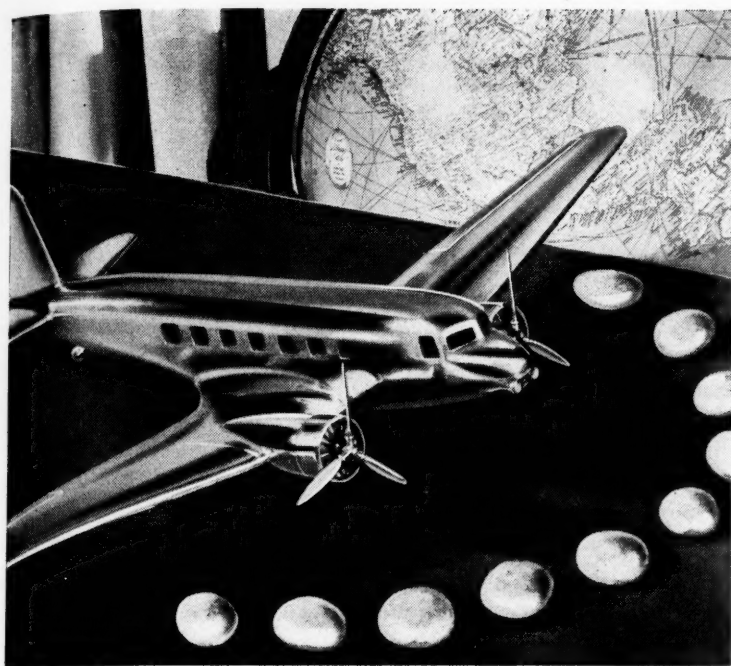
• • •

Newport News Shipbuilding and Dry Dock Co.

(Hydraulic Turbine Division)

90 Broad Street, New York, N. Y.

Newport News, Virginia



THEY WERE THE SEEDS OF SPEED

ONLY FIFTY fleeting years ago this spring, young Charles Martin Hall held in his hand the first shining pellets of commercial Aluminum. They were the seeds of speed.

For Hall had made a semiprecious metal into a common metal; had released its lightness to be made ready for the streamlined trains, the buses and trucks, and the swift all-metal airplane of our generation.

Transportation and Aluminum have come of age together.

The slow trains and the buggies of the early nineties had little need for the lightness of Aluminum, because the means whereby modern speeds are attained had yet to be developed and perfected.

The saga of transportation is one of concurrent development of motive powers, steam, gasoline, and electricity; of roadbeds and highways; of concrete and metal and rubber; of hesitant wings maturing into commercial flight.

In that progressive development there always comes a time, in the search for speed to shrink time and distance, when each field of transportation needs lightness for lightness sake.

The airplane's need was first and most acute. Aviation had to have lightness coupled with great strength. It found Aluminum ready, made ready by years of steady, plugging progress.

Nature made Aluminum light, but its strength

and versatility came from years of scientific research in quiet laboratories and on test floors. Pioneering studies in stresses and strains. Engineering tests that no common metal had ever been called upon to meet. Development of special heat-treated alloys. Methods to cut costs.

By these things, speed was given wings.

Aluminum was ready to answer the call for lightness in all moving things: the automobile engine piston, the bus body, the truck body, all moving parts, all mass-in-motion, and finally, the streamlined railroad trains.

The engineering profession gave the challenge. The metal-working industry mastered the quirks. Great mills with costly equipment were built to produce the rolled sheet and structural shapes that were to be needed, before ever an order was on the books. Millions of dollars of earnings were plowed back into preparation for the day when transportation engineers would begin to write lightness into their specifications.

Engineers in quest of lightness staked their professional reputations on Aluminum's ability to stand the gaff of rail and air and highway service. To them an appreciative industry expresses its thanks for their confidence, its homage for their vision.

For the day of lightness is here. The swan song of needless weight is being sung. Aluminum has become the *speed metal* of a new and faster age. Side by side with the older metals it is giving you faster transportation, with greater safety and economy.

A FIFTIETH ANNIVERSARY MESSAGE FROM

ALUMINUM COMPANY OF AMERICA
MAY NINETEEN THIRTY-SIX



Destruction ... of **WHAT** ?

Here is an American home . . . in any city, your city. Here lives a family . . . reasonably confident of personal security and opportunities for betterment both for self and children.

This family probably is a user of electricity. It may be a family with savings in public utility securities. It may be the family of a public utility worker. And it IS a family of taxpayers.

Whether user, investor, worker, taxpayer—or all four—every such American family, and every community of families, is directly concerned in unfair attacks upon public utilities. These represent a drive against a business which has constantly improved its physical facilities and the “tools” of public usefulness . . . progressively reduced its prices to the householder until they average a little more than 8c a day for a greatly increased volume of electricity. If those now engaged in this attack were to effect, instead, a 10% reduction in the cost of government, the per-

family saving to the people would be equivalent to the cost of a whole year's supply of electricity in the average home.

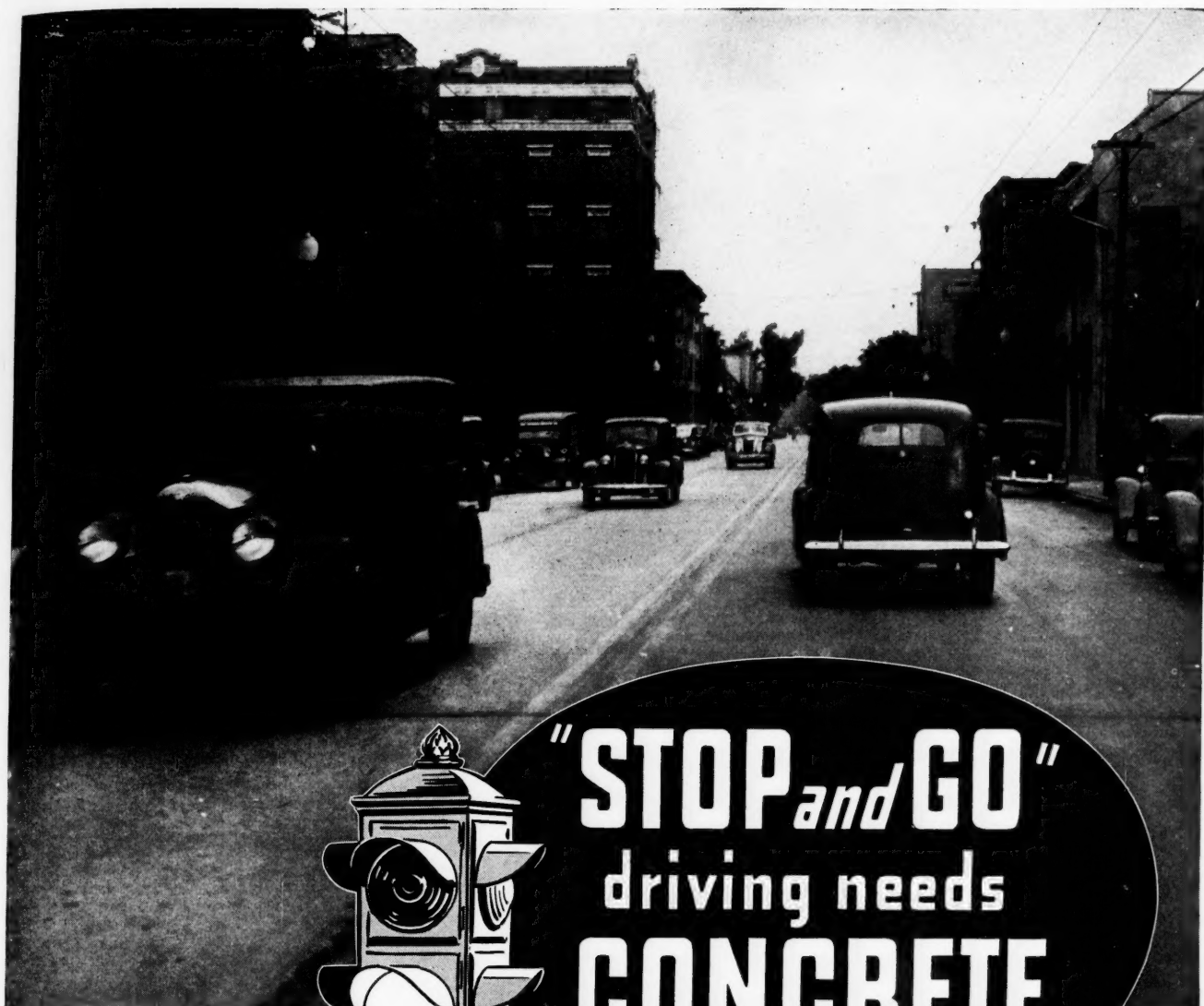
Wrecking the great American public utility structure means more than “death sentences” to corporate bodies . . . It hits at the people themselves!

What does this destruction threaten? . . . destruction of the public's rights and interests in the character and quality of service rendered; of local regulation; of values represented by their invested savings; of job stability; of the progressive, experienced and RESPONSIBLE management that has brought this industry to its present advanced state—and substitution therefor of experiment and exploitation of transient bureaucracy.

This destruction is no mere fear—politically inspired action is under way writing it into the laws of the land. Can you afford to go down that road?

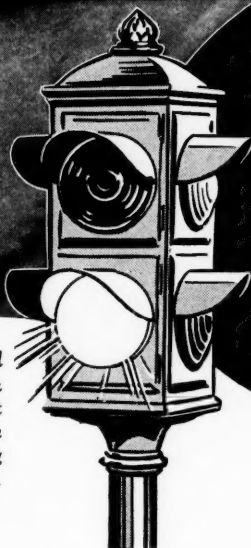
THE COMMONWEALTH & SOUTHERN CORPORATION

MICHIGAN - OHIO - ILLINOIS - INDIANA - PENNSYLVANIA - GEORGIA - FLORIDA - MISSISSIPPI - SO. CAROLINA - ALABAMA - TENNESSEE



"STOP *and* GO" driving needs CONCRETE

Since 1931, Indianapolis has forged steadily ahead toward the completion of a farsighted program of street modernization. Over 250,000 square yards of new concrete resurfacing and widening are now in service.



TRAFFIC on streets such as this is measured in millions of car miles annually—and millions of car stops. Time after time every motorist stops and starts in response to signal lights, stop signs, traffic interruptions and emergencies. The ability to make these stops swiftly, surely, with least possible skidding or slipping, is an essential of safety.

Concrete streets have a uniformly gritty surface that offers maximum traction under

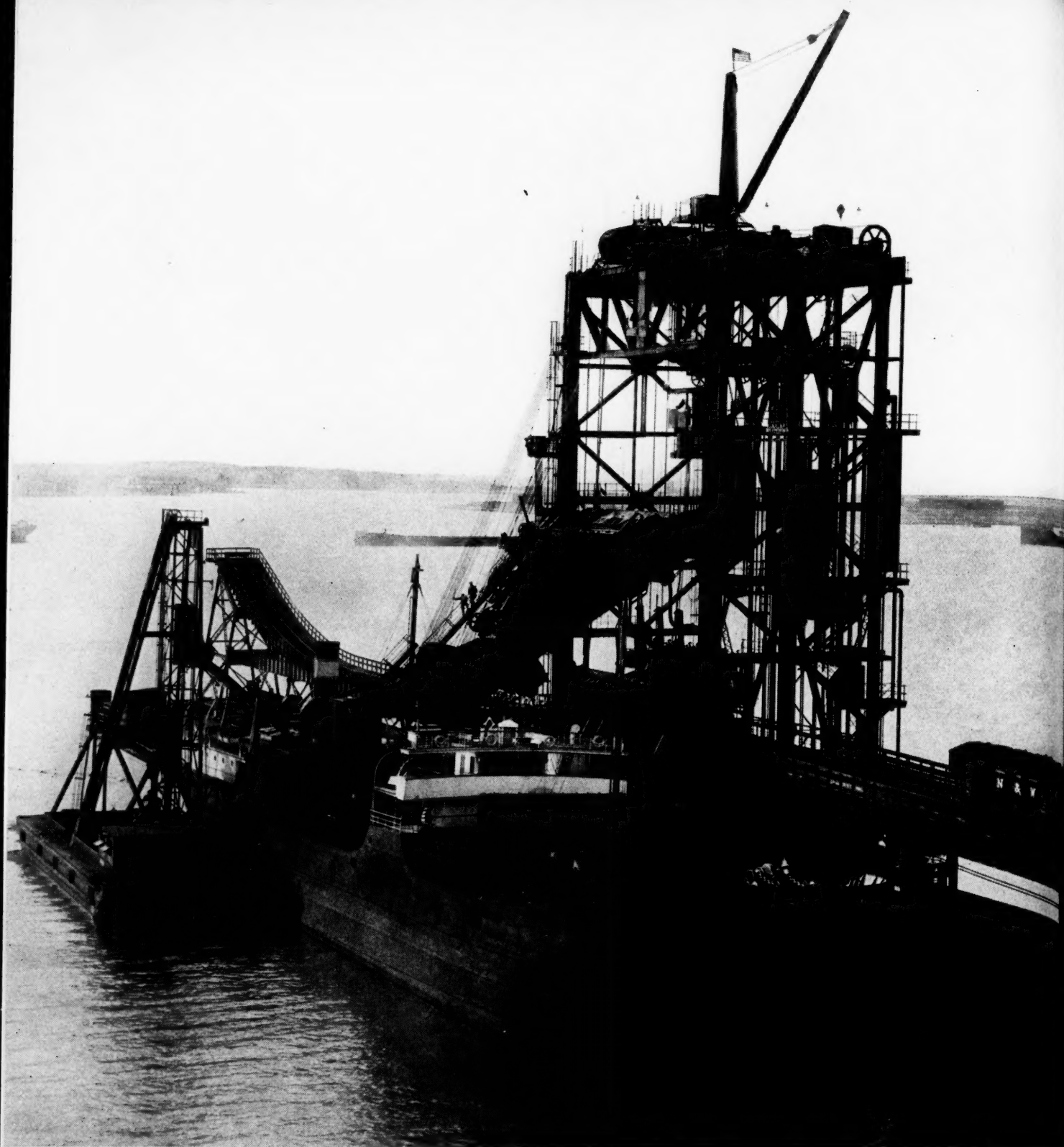
any weather conditions. Tires grip and hold; skidding is reduced to a minimum.

The even contour of concrete streets adds further to their safety, and concrete's light-gray matte surface improves visibility at night.

A lift to your safety program is the priceless "plus" value of concrete—the pavement that costs the least to build and maintain for a given load carrying capacity—the pavement motorists and taxpayers overwhelmingly prefer.

PORTLAND CEMENT ASSOCIATION

Dept. A5-21, 33 W. Grand Ave., Chicago, Ill.



THE ELEMENTS OF PRECISION TRANSPORTATION—MODERN COAL HANDLING FACILITIES

For more than a half century the Norfolk and Western Railway has been among the foremost railways of the world in providing modern facilities for the transportation and handling of coal • As a climax to this era of service to the coal trade, the railway announces the completion of a new low-level, lake-type coal pier—the most modern, efficient coal pier in existence • A coal pier that will accommodate the largest vessels afloat • A coal pier that eliminates breakage • A coal pier that saves vessels one-fourth of their berthing time when taking cargo and bunker coal • A coal pier (the only one on the Atlantic coast) at which a vessel may be bunkered and loaded with cargo coal simultaneously, without either operation interfering with the other • The Norfolk and Western's new pier, located at its tidewater terminal at Lambert Point (Norfolk), Va., is in fact, a unique assemblage of the best features of all piers of the same type • Modern, efficient coal handling facilities—another of the elements of Precision Transportation •

NORFOLK AND WESTERN RAILWAY • PRECISION TRANSPORTATION

• Manufacturers Record •

TAXES THIS YEAR AND NEXT

HIGHER taxes are necessary if government credit is to be maintained. All right thinking people want it maintained, notwithstanding the waste and profligacy which are the main reasons for more taxes. The "more abundant life" idea has been costly.

We are told now, as the new tax bill is introduced in Congress, that next year taxes will be still higher. The debt soon will approach 36 billion dollars and it is estimated that it probably will reach 40 billion dollars by the following year. Politicians may shy at creating a larger debt when they see the effect of mounting taxes. Fearing for their jobs, they may go so far as to advocate repudiation or, what is practically the same thing, currency inflation.

The debt, however, a large part of which was incurred by our agents in spite of the rules of safety and experience, must be paid, but it will be the part of wisdom if there is no let up in the insistence upon a balanced budget, because without that, plans of the individual and the corporation, the state and the country, are lopsided.

Corporations, in studying the tax measure, will consider possible additional avenues, besides dividends, for surplus distribution to save taxes.

Many have felt hesitant during the depression about reaching out for new markets which hold out attractive opportunities. They have been unwilling to risk accumulations in an effort to expand.

Opportunities grow larger every day as science opens new fields of enterprise for better living and greater good; fields that require aggressive and confident entry by private capital. It is not to be doubted that, with an attitude of helpfulness to business on the part of government, the development of the past will seem small in comparison with what the future holds.

In his Baltimore speech the President put it up to industry to "undertake reasonable reduction of hours of work, while at the same time they keep the average individual's pay envelope at least as large as it is today."

Insisting that wages must be kept up and higher prices paid for commodities, we have seen the result in continued unemployment and a steadily increasing relief bill. Notice of requests for huge appropriations next year for this purpose already has been served.

We would have been further out of the depression if we had approached it from the other side and made

prices attractive to buyers, instead of boosting them. The result would have been increased employment and increased production. Instead of that, we have an artificial situation, and demands for more taxes.

Business has been better because of the necessity for replacing equipment and supplies. There is still grave need, however, for stimulating the demand for capital goods, and this will not come about until there is confidence to buy ahead and organize selling campaigns that reach out ahead. The cart has been put before the horse. The effort has been to overcome immutable laws, and it will be well to get back to common sense thinking.

The President referred in his speech to "flaming youth" as a "flaming question." The opportunity for young men who are interested would be just as great as ever before in our history, if not greater, but they are being told to look to government for "frontiers." This is in line with the teaching of recent years in our schools and colleges to which we have been indifferent by leaving our children to the guidance of radical theorists whose work now finds expression in Washington. Such teaching has been opposed to the American spirit of progress, individual liberty and individual work that brought and still will bring individual success if we stop following the wild ideas of Europe.

We have had depressions before, but we have made a severe one worse by trying to turn common sense laws topsy turvy and attempting to reform practically every phase of human life. Less work—boondoggling—"free social cooperation"—and other nonsense creates confusion, as the hand of government, that might be helpful, is thrust forward as a menace.

The present course of unlimited spending must be abandoned if the country is to be solvent. Billions pumped into trade arteries have stimulated buying of consumer goods, but unemployment has been reduced but slightly.

Centralized political control of America's activities will not work in America.

On the front cover of this number is an extract from one of Henry W. Grady's historic addresses. He described the individual liberty which is the foundation of America's progress. "Let him lean on the State for nothing that his own arms can do, and on the government for nothing that his State can do."

That is the right, the safe, the only ideal for American freemen.

WHAT ARE WE TO DO ABOUT OUR HIGHWAYS?

THE output of motor vehicles, which is fast approaching the peak figures of boom years, the loss of human life in traffic accidents and highway traffic congestion, all point to the imperative necessity for building wider and better highways. Present facilities are insufficient to meet the pressing demands of the situation.

Even if there was no diversion of gas taxes, and there is a large amount of such diversion to other purposes, it is doubtful if, with the present type of roads and the money available, there could be much more done than to keep them in order, especially following a winter such as we have just had.

It does not take a student of traffic to see that on well traveled roads, and this, of course, is more noticeable on holidays, the delays and the dangers are tremendous.

First of all, the diversion of motorists' taxes to uses other than roads should be stopped. It is not fair to those who pay the tax and breaks promises made by the states when the tax was imposed. If this is done, it is believed that present roads can be properly maintained and the investment in them conserved. Roads are now, in many places, going to pieces because of the heavy volume of traffic they must carry, because funds raised by taxes, which were supposed to be available 100 per cent when the roads were built, are no longer available.

This, however, does not answer the question of what we are to do about new highways. The suggestion was made in Congress the other day that a 450-foot super-highway from Boston to San Francisco be constructed, with at least eight lanes for traffic—four of them for trucks and four for private vehicles. This proposal recognizes the fact that super-highways before long must be general.

The remarkable growth of the automobile has been due to the demands of the American people. They are motor-minded and it is as certain as tomorrow's sun, although we have now 25,000,000 automobiles, the time will come, and soon, when we will have a great many more than that number. It was said long ago the market for motor cars would not be exhausted until every family had not only one, but two and three.

The question presses for solution. Perhaps cotton, with which extensive experiments are being conducted, may help to solve the problem of secondary roads. Perhaps cotton roads, under adverse conditions, will wear longer and provide better service than the existing types of construction.

With funds provided by the U. S. Bureau of Public Roads, thirty-two states are making the most comprehensive survey of road facilities yet undertaken. This ought to be the basis for a proper development of roads, because facts then will be available as to traffic on individual roads that should govern the type of roads and the material to be used in their construction.

It is a problem that affects everyone. The highway

engineer is giving his study to the building of safer highways.

Someone has said that highway planning is under the microscope. It is not impossible that the chemist with his record of accomplishment may find the solution rests in a different type of highway, or the engineer may discover, by changing the foundation, both depth and character, and a different use of materials and application may give us a road that will not cost so much to keep up.

There must be closer cooperation between truck builders and highway builders. In states where earnest attempts have been made to meet the requirements of modern truck transport, with increasing weights and high speeds, by rebuilding bridges, putting in heavier foundations and doing everything funds would permit to keep ahead of what the manufacturers might turn out in the way of an improved product, it has been almost impossible to keep abreast of the changes.

With the diversion of taxes stopped and the totals applied wholly to road maintenance where they belong, it will be either up to the scientist to discover the way of building a longer-life road, or the country will have to pay more for their construction. It is also true that only 10 or 15 per cent of our highways are improved. There is a vast field of future work in road building to bring every part of the country into closer contact.

RELIEF AND UNEMPLOYMENT

A DEPLORABLE thing about our present situation is the utter absence of clear thinking, not only on the part of Government officials, whatever their intentions may be, but on the part of many people who so far have failed to see the fallacies in New Deal experiments in economics. Reduced to fundamentals the fallacies are so obvious that it would seem impossible to disguise them with any ballyhoo.

Take, for example, "this business of relief," which is largely responsible for the enormity of public debt incurred by this Administration.

Let's look at the logic of it. Money for Government relief can only be obtained through taxation,—public borrowing, of course, is only taxation in another form. Industry in the final analysis must pay all but a negligible part of any tax bill. Therefore, industry must pay for relief when the Government administers it.

How can industry bear the dead weight of carrying men on relief from which it receives no benefit in productive effort and at the same time expand its operations to the point of hiring men from relief rolls? The task would be doubly difficult even if there were no waste in Government administration and all the money appropriated for relief purposes were distributed to deserving people.

Government relief is an obstacle to re-employment.

MANUFACTURERS RECORD FOR

CONSTRUCTION REVIVAL

It has been pointed out frequently in the MANUFACTURERS RECORD and elsewhere, that we shall have no real prosperity in America until the construction industry revives. The census of 1929 showed that in importance, construction ranked second only to agriculture. Its operations are country-wide. In doing its work, which calls for products of many varieties, craftsmen of many trades are given employment.

Someone said long ago "a nation's civilization may be judged by its transportation facilities." It would be equally correct, in the formation of an accurate estimate, to consider the homes and business structures that house its citizens.

To say that the outlook for construction in all of its wide ramifications is distinctly favorable and to view the future optimistically and encouragingly, as A. P. Greensfelder, vice president of the Construction League of the U. S., views it in this number, will give encouragement to some who may have thought that because of high prices of labor and material, building would continue to lag for some time to come.

The MANUFACTURERS RECORD always has given special attention to construction activities. They reflect progress and development and creative work. Their details are never hum-drum, or so it seems to us, but provide a thrill that attends creative effort.

Mr. Greensfelder carries the reader along with the broad sweep of his outline that comprises virtually the rebuilding of America.

No one having faith in America can doubt the correctness of his perspective when he says "America is not finished. Let us hope it never will be. The construction industry faces the future with courage, optimism and conviction, and its accomplishments will surpass the vision of any of us now living."

He does not overlook the contractor's responsibility "to provide at all times the maximum of comfort and contentment at minimum cost." He deplores the lack of a long-range public works program, condemns waste and hits at the day labor method employed on relief projects, but at the same time recognizes that government leadership has been constructive in its handling of certain phases of its approach to the great need of the country for improved housing facilities.

He expresses the opinion that government subsidies for housing will stifle the investment of private funds in such projects and holds "low rental housing is a local problem."

Replanning commercial zones in American towns and cities is seen as an imperative need, and Mr. Greensfelder points out the opportunities for contractors and the producers of building materials and equipment. He predicts a bright future for air-conditioning by saying the public will demand that buildings of all types be as comfortable in summer as in winter.

There are to be vast opportunities for employment of contractors in the building of national and state parks and in providing highways and bridges through and approaching such areas.

TELLING THE SOUTH'S THRILLING STORY

THE discussion, New Frontiers, last month in this place, attracted gratifying attention. It is being pointed out in another article in this issue that science is creating a new world, a world in which individual effort and energy will develop their own frontiers and not look to government to create them.

Truly the chemist is molding our life and making it more abundant, not through extravagance, but by discovering resources of wealth from material, which too often, in our haste, has been wasted.

Nature has been lavish in supplying this country with material for wealth beyond computation, and the South is peculiarly favored.

In assembling the data for the annual Blue Book of Southern Progress, even those who have followed the work for years, are constantly amazed by the new opportunities for development which are being uncovered by scientific research and a practical approach to the questions of what our markets here and elsewhere require for human betterment and progress. As confidence returns, capital will find here abundant fields that should yield rich reward.

Notwithstanding the visible evidences of depression years from which the country is emerging, this new edition of the Blue Book of Southern Progress will be more interesting from every standpoint than it has been in the past. This is not from statistics of material progress or greater output, because in some lines the depression has registered declines, but in newer enterprises such as chemical manufacture, where the growth has been amazing, and in the activities of the lumber industry with its program of conserving supply and increasing the uses of the South's vast timber resources. It is far from being wholly imaginative to say the time may come when the South's wood crop will be of more value than its cotton crop.

There is widespread interest in the 1936 Blue Book, because people see the importance of the invitation the South extends.

Its population is predominantly American, with an admixture of foreign stock far less than other sections. Its climate makes living conditions simpler and more enjoyable than elsewhere the year around. It has millions of acres of soil that can be made to yield several crops each year, and through its agricultural by-products create still greater opportunities for productive enterprise.

These reasons account for the widespread interest which is being shown in this section.

The Blue Book of Southern Progress, because of the story it will tell, should be distributed to the four corners of America by Southern Chambers of Commerce, railroads and public enterprises desirous of attracting the attention of manufacturers and investors. It is a work kept for reference because its facts are obtainable nowhere else in such form.

Science—

BLAZING NEW TRAILS

Chemist and Research Engineer Building A Prosperity of Plenty Based on Comparatively Cheap Goods Widely Distributed

Vast Productivity To Go With Steadily Expanding Utilization of Materials—

MUCH has been chronicled of the romance of other days, of fighting pioneers and trade in clipper ships, of the "glory that was Greece and the grandeur that was Rome". Much time and many words have been spent in the argument that as natural frontiers recede, the glamour of civilization pales.

In essence, this may be true, but one need not dig an underground railway to discover barriers just as real, mountains just as unassailable, as those of the adventurers of other times.

If your automobile engine functions properly on the gasoline you buy, you may question what further need to change its content or process of manufacture. If your house receives its coat of paint this spring, you'll be kicking if the job has to be done over in a year. Then, again the soap may not lather in the hard water pouring from your faucets.

These are some of the common-place questions to which the chemists of America have been finding answers. More than any other agent, the chemist is molding the lives of our people, and the civilization of the world, by the results of what he finds when he holds that symbolic test tube to the light and scrutinizes its content so carefully.

Time was, when an industry plodded along in about the same old ruts, year after year, buying raw materials, refining them, turning out an article of about the same quality and design, research into raw materials was thought unnecessary. Ultimate replenishment of the supply, also, caused few people consternation. The country was young and strong. Natural resources

abounded. Fuel, water-power, minerals, as well as comprehensive agricultural resources, awaited man's management.

Then, strenuous inter-industry competition had not yet reared its head. The need to manufacture one's product cheaper, faster, better than one's competitor had not arisen. Development of new materials, new methods of manufacture, new short-cuts, was correspondingly slow, and for the same reason.

Chemistry's Latest Magic Revealed at Kansas City

Some idea of the remarkable possibilities for the development of new industries and the revival of old through the intelligent application of industrial research was had at the recent meeting of the American Chemical Society in Kansas City, Mo. More than three hundred papers and addresses were delivered, dealing with medicine, petroleum, industrial chemicals, paint and varnish, building materials.

Seeing important industrial work ahead for chemistry, Dr. Edward R. Weidlein, director of the Mellon Institute for Industrial Research, avers that: "Certain old industries based upon the utilization of nature's raw materials have been going forward with a halting step. The coal industry, for instance, has not been sufficiently appreciative of science. Coal has been replaced heavily by the offspring of scientific research in other fields—other forms of fuel and power, and economies in the use of fuel."

At the same time, "The illumination, telephone, radio, automobile, airplane, synthetic textile fiber, and metallurgical

industries have been constructed scientifically from their basic inventions, and at present hold important places in our industrial organization."

Apparently, when research is of greatest economic benefit, it proceeds from the utilization of natural materials, such as coal, natural gas, petroleum, wood, cotton and cereals, as sources of new and valuable commodities made by synthetic methods. Industrial science, meaning the blending of both scientific and industrial research workers with the pure science worker, has contrived to reduce materially the time-lag in the development of manufactures too numerous to mention.

Multiple uses for agricultural products are being disclosed each year. Some of our most important industries are indeed based upon farm products which are being identified with the manufacture of plastics, cellulose, artificial sausage casings, insulating materials, paper stock, smokeless powder, photographic film, lacquers and artificial leather.

Two late instances of the part played by synthesis of natural materials are found in synthetic camphor and a synthetic rubber, composed of coal, lime and salt, which is said to out-perform natural rubber.

Romance In The Laboratory Following Uncharted Paths

ROMANCE? There is romance a-plenty in the laboratories of the forward-looking industrial enterprises of America.

The list of recent improvements

in the methods of everyday life, brought about by these men of the laboratory, whose individual achievements are so rarely known, reads like a "believe it or not" column in the daily newspaper. Frequently, in the pursuit of a certain end, analysts are forced far from preconceived hypotheses, and the consequent expenditures of time and money may be enormous. One American company over a five-year period expended more than \$40,000,000 in the development of dyes, before getting one cent of profit.

Consider, the use of fish oil in the making of paint, for example. Few people realize that the can of sardines in their kitchen and the finish on the furniture may have the same starting point. Few farmers know that the fertilizer used to enrich their soils may have come from the same fish as the oil in the paint used on their buildings and equipment.

So it is, fish oil is now used in various paints, varnishes, lacquers, enamels, electric insulation, brake linings, disinfectants, tree sprays, soaps, and even raincoats. These oils go out from the refinery to industrial plants all over the continent.

Pushing Back Frontiers of Human Knowledge

IN some countries the desire to aid agriculture, increase employment, improve the trade balance, or accomplish other objectives of a broad, sociological or economic nature has resulted in preferential treatment in the form of direct subsidies or tax differentials to the use of alcohol-blended gasoline.

The introduction of such blends into a section where they have not been previously used generally arouses public interest. L. E. Christensen, of Ames, Iowa, after studying the results of alcohol-gasoline blends distributed in the Middle West during the past three years, makes this observation: "Better mileage, improved acceleration, smoother and more pleasing engine operation, and other advantages have been reported by users of these fuels." But not all technicians are in accord with Mr. Christensen.

At Atchison, Kansas, a new plant for the production of alcohol from fermented distillates of grain, potatoes and other farm products, has been established. When operating at capacity it will consume 70,000 pounds of corn and distillers' grains daily, and will produce, besides a high grade dairy and stock feed as by-product, 10,000 gallons of alcohol. Already 450 filling stations throughout the Mid-west are selling blended gasoline, according to reports.

Onward March of Science

WHETHER newly developed fuels will be satisfactory no doubt will lie in the direction of further research, as for example with the high-speed motion picture camera which has been developed by the Research Laboratories section of General Motors Corporation, to investigate the explosion phenomena in an operating gasoline engine. These pictures are taken at the rate of 5000 per second, through a large quartz window which gives an unobstructed view of the whole combustion chamber.

The camera is operated in conjunction with auxiliary apparatus which records pressure-time curves of the engine explosions as they are being photographed. By intercomparing these pressure records with corresponding flame pictures, it is possible to study the engine's performance under varying conditions of load and fuel.

The result of this may enable engineers to make automobiles cheaper, and fuel more efficient, and will, of course, result in ultimate savings to the consumer. Such are the rewards of research.

Engineer and Chemist Tamper With Nature

"AND yet we have only begun this creation of a new chemical environment, a new mode of life. If the test of our culture is the degree of its departure from nature—cotton cloth instead of skins, gas in the kitchen instead of wood, electric lights instead of flames, rayon instead of silk—we have still far to progress chemically. Our society is what it is because the engineer and the chemist have tampered with nature, torn her coal, her trees, her beauty apart, discovered how they were created and then proceeded to make new combinations of his own. . . . A new world can be created, easier to live in, more suitable to a creature like man." (New York Times editorial).

Science Beats Silkworm

SCIENCE not only tears nature to pieces, it beats her at her own game. Witness the rise of rayon to its present eminence. A ball of the latest gossamer textile weighing only one pound, would unroll to a lineal distance of 2500 miles, or from New York to San Francisco. This represents a fiber, mechanically fabricated, one-third thinner than the finest natural silk.

Traceable to a fuller understanding of molecules as well as improvements in machinery and chemical solutions, rayon typifies the success of the chemists' work. Today, molecules are investigated, classi-

fied, and then shuffled around into new combinations, more congenial to the uses of man.

The Soybean Ranks High As Farm Crop

THE soybean, too, has great commercial potentialities in this country. The 1935 harvest amounted to 40,000,000 bushels, or double the previous year. Demand is increasing; more products require soybean oil. Where for 250 centuries prior to the present, it was no more than a sacred bean plant of the Orientals, soybeans are today lending their good qualities in the manufacture of paints, bakery products, soap, steering wheels and other plastics.

It took the industrial scientists of the 20th century to discover the manifold uses to which it could be put. Recent surveys of more than 100 manufacturers of soybean products, show that the crop is being used for everything from horn buttons to hairpins. In 1932, 9,000,000 pounds of soybean oil were used for soap-making by our domestic industries.

Chemical research sometimes answers questions of importance, but which seem as naive as, "Why does soap cleanse?" No one has been able to answer that question until recently. Electricity, as in the case of many other functions, seems to be the answer. Say Swift and Company chemists: "Soaps are capable of electrifying various materials such as carbon, grease, rust and the like. The electrification of such particles is believed to be part of the explanation of the cleansing action of soap."

Molders of Civilization

IF we lived in a civilization of stone axes and the loin cloth, it is probable that the services of the pure scientist would be lost upon us. Living in a highly complex world of change, where competition is like a keen-edged blade, and progress is measured by improvement in the thousands of little commodities of daily life, we must depend more and more upon our chemists and engineers. No longer can we exist by the rule of thumb, however quaint the associations attached thereto.

It is not at all inconceivable that the habits and the work of our day may look quite as adventurous to yet unborn generations, as do the covered-wagon days to us of 1936. As Dr. Weidlein says:

"Radio may be said to be only a day old, compared to what it will develop into in the future. Television is one hour old. Housing, gasoline efficiency, motor cars and a thousand manufacturing methods and objects are but beginning now, compared to what they may be developed into through scientific research. The surface has only been scratched."

WEALTH IN SOUTHERN FORESTS

By

E. L. Kurth,

President, Southern Pine Association,
New Orleans, La.

THERE are 190,758,000 acres of forest lands in the South, or 38% of the total forest area of the United States. Furthermore, Southern forest produce 58% of the total amount of saw-timber grown each year in the nation.

The area of pine forest land in the South totals 150,570,000 acres, equivalent to the combined total areas of the states of New York, Pennsylvania, Ohio, Indiana and Michigan. Of this tremendous forest area, 42,261,000 acres or 28% is in merchantable saw-timber; 42,365,000 acres or 28% is in cordwood-sized timber; 53,462,000 acres or 36% is restocking to saplings and young growth, and only 12,481,000 acres or 8% is deforested.

The forest survey of the South now under way by the U. S. Forest Service is finding that even 8% is a liberal estimate of the deforested area and that 5% probably will be more nearly correct.

Based on preliminary reports of the Forest Survey, the Conservation Department of the Southern Pine Association estimates that 200 billion feet of merchantable Southern Pine saw-timber is standing in the South today.

As this "back-log" of timber supplies is gradually harvested, the areas now in cordwood timber will mature into saw-timber and as this, in turn, is harvested the restocking areas will have grown to merchantable stands. Thus, successive crops of Southern Pine will mature into saw-timber as needed, and in sufficient quantities to provide Southern Pine mills perpetually with their normal timber requirements.

Nowhere in the country are climatic, soil conditions, and native tree species so well adapted to the rapid reproduction and growth of softwood forests as in the South. Saw-log harvest can easily be repeated on the same areas in cycles of from 20 to 25 years or even less. Under present and steadily improving policies of reforestation, the existing commercial forest areas are permanent and will be an increasingly important source of supply of softwood lumber and other forest products.

**Southern Pine Industry
Is on Permanent Basis**

Lumber manufacturing in the South is a stable industry. Many sawmills will

AFTER the many years that sawmilling has been a major industry in the South, there is no scarcity of Southern Pine timber. Surveys disclose a sufficient timber back-log for many years to come, including several million acres of virgin timber. At the rate new forests are growing throughout the region there is every reason to believe there will be a continuous supply of Southern Pine timber.

So it is that renewed interest is manifested in the naval stores industry of the South, and in the concentration of the pulp and paper manufacturing industry in the States from Maryland to Texas.

Southern forests produce 58% of the total amount of saw-timber grown annually in the nation. From these forests are drawn about 78% of the world's supply of turpentine and resin. In pulpwood production, the South has a distinct advantage in that Southern Pine grows faster than northern spruce and hemlock, and is more easily converted into pulpwood.

Thus, it is logical that foresters predict that in the not far distant future timber will replace cotton as the South's cash crop. Even now in 12 Southern States, timber is the farmers' fourth largest crop, being exceeded only by cotton, tobacco and potatoes. In 4 states, forest products rank second as a source of cash income to farmers.

The abundance of timber, the rapidity of its growth and the steadily increasing value of its by-products, coupled with sound measures for elimination of destructive cutting, perpetuation of supply and conservation of lumber, make the South an ideal territory for the development of lumber and paper industries.

The manufacture of newsprint, proved economically practicable by Dr. C. H. Herty, of Savannah, Ga., promises to be the next major industrial development in the Southern States. Kraft paper and paperboard production in volume is turned out by costly plants in Florida, Georgia, Maryland, Virginia, West Virginia, Louisiana, Texas, and Arkansas.

Development of the newsprint industry in the South will logically be considered in relation to production of lumber and other forest products. Pine timber has been proved admirably suited to production of sulphate pulp, which is being constantly consumed in increasing quantities for Kraft paper, boards, and other well-established uses, as well as entering many fields formerly supplied by sulphite pulps.

Over \$30,000,000 investment is represented in paper mills definitely projected and actually under construction in the South. A \$4,000,000 mill is being completed at Savannah, Ga. Work is well advanced on construction of a \$3,500,000 pulp mill at Houston, Tex., and on a \$4,000,000 pulp and paper plant at Crossett, Ark.

Plans and specifications are being completed for a Fernandina, Fla. paper mill. Meanwhile, negotiations are under way for the location along the Atlantic seaboard of two paper mills, one of which will involve the construction of the most costly plant of its kind in the nation—\$12,000,000.

Besides, extensive improvement and extensions are being made to established mills in Panama City, Fla., Lynchburg, Va., Luke, Md., and Mobile, Ala.

But with all the vast possibilities for expansion of the timber and related industries, experts agree that the amount to be used for lumber will far outstrip that used for any other product. In fact, the South is the one section of the country, because of its highly productive forest lands, that is expected to yield substantially more lumber in the future than now. Sustained yield forest management promises much for the economic welfare of the South.

be as permanent as other manufacturing establishments, and will attract to their vicinities allied wood-using industries of a permanent nature. Those mills that are not permanently located will be portable units working out from common centers or concentration points where the lumber they produce will be refined, and these concentration points will be permanent.

Some Southern Pine lumber companies have for many years been practicing selective cutting and fire protection measures designed to perpetuate their operations. Many others have more recently taken the same steps and are finding that with proper care their cut-over and sec-

ond-growth lands will provide for future operations at or close to their present capacities. Even the natural reproduction of Southern Pine without conscious care has resulted in merchantable stands of pine saw-timber on most of the cut-over areas that formerly were considered worthless.

Southern Pine lumbermen are not devastators. On the contrary, their operations are constructive as is evidenced by the small amount of deforested land in the South and by the fact that a great many mills have been in existence for from 30 to 40 years and a considerable number for even longer.

It is true that some mills "cut out"

but it is also true that others spring up in the same vicinities or elsewhere to take their places. There is probably but little more retiring from business by sawmills than by other industrial plants or business concerns. The fact that the Southern Pine industry is with us today as virile as ever and limited in size only by the demand for lumber is indicative of its permanence as a constructive factor in the economy of the South.

Lumber Industry Sets Pace in Attacking Fire Problem

In the 11 states comprising the major portion of the Southern Pine producing territory, 60,000,000 acres of privately-owned forest lands are receiving fire protection from the states and private owners. It should be noted that this protection is not primarily for the purpose of saving mature or merchantable timber from fire, since the South does not experience such serious forest conflagrations as occur in the West and the North. Forest fires in the South rarely kill much merchantable timber due to the natural resistance of Southern Pine species to fire, and because most forest fires in the South are ground fires. The protection is given primarily to save immature timber, saplings and seedlings. The fact that Southern lumber companies, farmers and timberland owners of every description are protecting their forests against fire is proof enough that timber growing is practiced on a large scale.

U. S. Forest Service reports show that 28,308 forest fires were reported in the Southern States during 1934 on the 60,374,000 acres protected by the states and private owners. Only 493 fires, or 1.7%, resulted from lumbering operations, the remainder being caused almost entirely by the public. The following table gives a complete picture of the causes of forest fires in the South.

<i>Causes of Forest Fires in the Southern States</i>	<i>Number of Fires During 1934</i>	<i>Per Cent of Total</i>
Incendiarism	12,439	44.0
Smokers	4,099	14.5
Debris Burning	3,436	12.0
Unknown	3,146	11.0
Miscellaneous	2,285	8.0
Campers	1,393	5.0
Railroads	798	3.0
LUMBERING	493	1.7
Lightning	219	.8

It is apparent from the table herewith that public wilfulness and carelessness caused practically all of the forest fires in the South. Only those fires started by railroads, lumbering and lightning, which together cause only 5½% of the fires, are not chargeable to the public.

Old-time beliefs, now largely disproved, that woods burning is desirable

to reduce the number of ticks, boll-weevils, etc., and to hasten the early grass for grazing, cause the large number of incendiary fires. Thousands of men are constantly at work in Southern forests getting out logs to keep the sawmills running, and the fact that only 1.7% of the forest fires resulted from lumbering, shows clearly how carefully such operations are conducted to prevent starting forest fires.

Southern Farmers Have An Important Stake in Timber

The Southern Pine industry, aside from its contributions to the general welfare of the South, is of great importance in furnishing cash income to farmers. Southern farms contain 30% of the commercial forest area of the South and 24% of the saw-timber now standing.

The development of logging truck and the improvement of highway systems throughout the South make it possible for farmers and other individual timberland owners to harvest and market their timber in small quantities. Practically all sawmills are in the market for logs and farmers either sell their timber on the stump or cut and haul it themselves when not otherwise employed.

Census statistics for 1929, giving the cash income received by farmers in 12 Southern States, show that timber is the farmers' fourth largest crop, being exceeded only by cotton, tobacco and potatoes. In Alabama, Arkansas, Mississippi and Virginia, forest products rank second as a source of cash income to farmers. In 1929, Southern farmers received \$82,000,000 for timber.

Reports to the Southern Pine Association from 51 mills in Alabama, Arkansas, Florida, Louisiana, Mississippi and Texas showed that during 1929, they bought 139,061,000 board feet of farm logs, comprising 10½% of the total logs cut by the reporting mills.

Many farmers through the South, with the assistance and encouragement of state extension foresters, consider their farm forest in the same light as other growing crops and harvest some timber each year in such a way that they are assured of continuous crops which will find a ready market at the sawmills.

The measures that have been undertaken by the Southern Pine industry, farmers, and other land owners, as well as the public, to protect Southern forest against fire and to harvest properly the successively maturing crops of pine timber assure a permanent lumber industry and, therefore, permanent markets for growers of forest products.

Cypress Cargo Sets Record

Burton-Swartz Ship Million Feet to New York

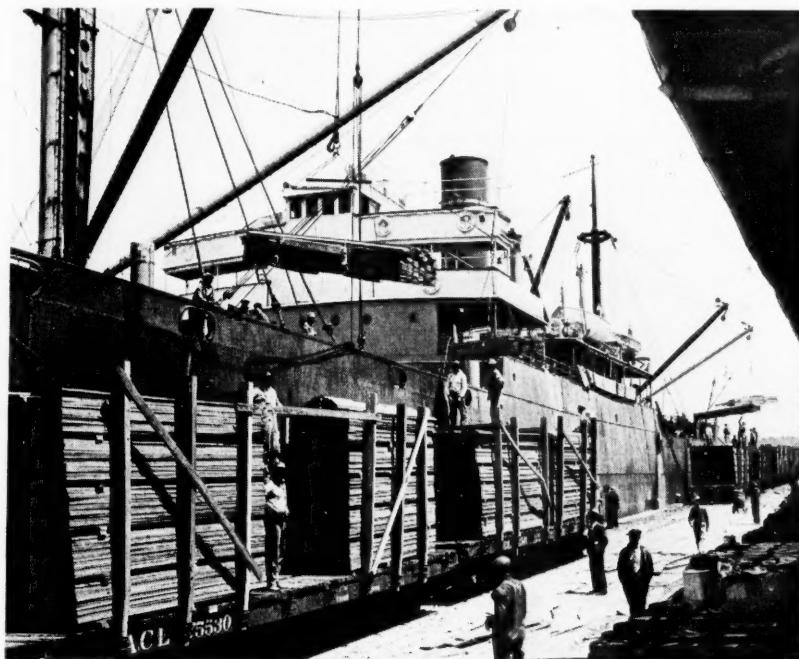
Jacksonville, Fla.—More than 1,000,000 feet of cypress lumber, considered by some the largest single cargo of that wood ever to leave this port in a coast-wise shipment, was loaded aboard the steamer *Western Sword* at the Municipal Docks.

Consigned to J. C. Turner Lumber Co., Irvington, N. Y., this shipment of choice Tidewater Red Cypress lumber consisted of 4/4", 5/4", 6/4", 8/4" and 12/4"—6" to 24" wide and 10' to 20' long.

The lumber was produced by the Burton-Swartz Cypress Company of Florida, Perry, Fla. It was moved to this port via the Atlantic Coast Line in two solid train loads.

Tidewater Red Cypress Being Loaded

Part of the big shipment by The Burton-Swartz Cypress Co., of Perry, Fla., being swung aboard the "*Western Sword*" at Jacksonville, for delivery to a New York firm.



THE CONSTRUCTION INDUSTRY LOOKS AHEAD

By

A. P. Greensfelder,

Vice-Chairman,

Construction League of the United States

Rehousing America Presents Manifold Opportunities

Rebuilding and Erecting New Commercial Structures

Coordinating Transportation Facilities Major Task

Long-Range Public Works Program Imperative Need

National System of Parks and Tourways Under Way

THE construction industry feels encouraged by its broad outlook for the current year in comparison with the last three years. We know definitely that there has been accumulated a large volume of construction requirements which cannot much longer await the needs of America. Obsolescence is continuous and awaits neither time nor tide. Judging from the increasing volume of manufactured products, the producers of goods must necessarily modernize their plants and construct such additions as their business will presently warrant. This applies particularly to producers of consumption goods. There is also an accumulation of demand due to the elements, fires and recent floods in various parts of the country.

Increased earnings of corporations will soon justify the application of their own funds and the placing of credit funds at their disposal for increased plant facilities.

Rehousing

THE rehousing movement in America is just getting well under way. As is usual after a depression, the greater activity is toward the modernizing of old homes. Following this is the demand for new housing. The FHA under Titles I and II is expediting such construction, and is also adding assurance to other investment companies that monthly payments over a period of years is just as sound a program in the United States as has been demonstrated heretofore in many Western European nations.

Trends in Dwelling and Apartment Construction

The periodical amortization of housing requirements is a very proper one and is rapidly being recognized as such by home owners. Leadership by the Government in this respect has been very constructive, and will undoubtedly be of major assistance in the future rehabilitation of single, double and four-family houses.

In the apartment field, vacancies are gradually being reduced in many of the large centers. This movement is accelerated by the applications of wage earners who feel that their jobs are not in jeopardy. It will not be long before the proportion of vacancies will be back to normal. This will cause rents to rise, and will justify investments in new enterprises and the air-conditioning of old ones.

It would seem self-evident that people

will desire to be as comfortable in the summer as in the winter time. If cold is minus, then heat is plus. It will not be long before general practice will include air-conditioning of some kind in all new structures.

Slum Elimination

The tenement problem is an entirely different matter. Slum clearance is equally important in the large metropolitan areas. The two, however, are not necessarily tied together. The blighted areas will either have to be modernized, or where the structures are obsolete or unsanitary, they should be demolished. Whether these same areas will be used for replacement of tene-

THE author of the accompanying article, besides being vice president of the Construction League of the United States, composed of architects, engineers, highway builders and contractors generally, is widely known as a successful contractor thoroughly conversant with conditions in his chosen field. He is past-president of the Associated General Contractors of America and his private work is that of a consulting constructor. We believe the optimistic viewpoint expressed by Mr. Greensfelder will go far to convince those who may have doubted the broad future opportunity before the construction industry of America.

ments or not will depend in each case upon local conditions.

Government Invasion Of Housing Field Unwise

Low-rental housing is a local problem. It would, therefore, seem impractical to handle it in a national way. If subsidy is necessary, then it would seem just as logical to subsidize the tenant for shelter as to provide the family with food and clothing through local community chests. This method of grant-in-aid will not affect realty as such. It would not cause private enterprise to vie with Government with which it cannot compete, because the Government pays little or no taxes, pays low interest and charges practically no overhead. It would seem difficult to interest investors in large housing projects unless they are assured that a Government subsidy on a similar project competing in the same area will not take place.

The construction industry is in sympathy with the movement for the rehabilitation of housing facilities. It recognizes, however, that such a movement must be practical or America cannot be readily rehoused. Government funds, be they ever so large, cannot rehouse America.

Such Government rehousing also raises the question whether it is good policy for Government to be the landlord of its citizens. The political coloring of such an enterprise makes it a grave matter and heretofore has been an un-American policy.

Constructors are realists, not theorists. We place men above money. Most of our leaders of today have risen from the ranks. Common welfare must always be the primary factor of any endeavor. To overlook it would be unnecessarily near-sighted. It is the function of construction to provide at all times the maximum of comfort and contentment to people at minimum cost. If it did not, it would be blind to its obligations as well as to its opportunities.

Commercial Structures

AS the inhabitants of urban centers recover their purchasing power, the nor-

mal volume of commerce per capita will recover. Already many "For Rent" signs have been taken down along our commercial thoroughfares. This is a very healthy indication. The reconstruction of store fronts and the modernization of "Main Street" are two of the most essential undertakings of the day. This applies equally as well to small cities as to large ones. If we can educate the citizens of our towns as to the desirability of obtaining a thriving and an attractive appearance to their stores, we shall make headway rapidly.

All "Main Streets" should not look alike. They should be individualistic, depending upon local climate, appropriate design and local building materials. Mr. Babbitt will then take a greater pride in his local community and support its business, instead of diverting it to those cities which keep abreast of the times.

City Planning Demands Attention

American cities need "reurbanization." This involves re-studying the city plan, re-zoning based on now known demands for commercial frontages and the establishment of neighborhood sections with neighborhood trustees to protect neighborhood investments.

The Construction League of the United States with its allied State Leagues are all giving much thought to this problem. The Construction and Civic Development Department of the Chamber of Commerce of the United States is also concentrating in this field. It is preparing a manual for the use of local chambers of commerce in which it urges the local chambers to establish "City Development" committees or departments, depending upon the locality and organization of the respective groups.

Engineering Construction

ENGINEERING construction is generally defined as horizontal in comparison with architectural construction which is generally called vertical. The major portion of engineering construction includes rail, pipe and wire projects as well as the ways of transportation.

Opportunities In Field Of Transport Loom Large

America is undergoing a thorough rehabilitation of its transportation facilities. The United States Engineers estimate that from the beginning of our Government to the middle of 1932, the total expenditure for river and harbor improvements was a little over one billion dollars. In addition to this, about three hundred million dollars have been expended in their maintenance. Our railways are valued at about twenty-six

billion dollars. Our total highway expenditure is growing rapidly and is perhaps one of the most civilizing influences of the present day. Our airway development is in its infancy, but is growing rapidly. Coordination of all these four ways of transportation presents a great construction problem.

Public Works

IT is unfortunate that America has never developed a long range plan for public works. This has been discussed for years, but has never materialized. The depression has therefore stimulated the Government to undertake such public work projects as would provide the maximum employment in the areas where unemployment is the greatest. The various Government agencies have been busily at work. The Treasury Department with its post office and federal buildings has erected its edifices throughout the land. The United States engineers' and reclamation projects are designed to conserve the water resources of the nation. The PWA has been active and under the contract system it supports has induced many non-Federal projects to be undertaken. The WPA with its research and minor work relief projects is still in our midst.

Boiler Plant Equipment For Savannah Paper Mill

Babcock & Wilcox Company Handling Important Installation at \$4,000,000 Plant

THE Babcock & Wilcox Company, manufacturers of boilers, with works at Barberton, Ohio, and offices in New York City, is sharing in the upturn in industrial activity in the Southern States featured by the construction of new plants and the expansion of existing manufacturing facilities.

One of the most important installations now under way by Babcock & Wilcox is at the \$4,000,000 Savannah, Ga., plant of the Union Bag & Paper Corp., which will get into production this summer. The installation comprises three B & W boilers, with superheaters, economizers, air-heaters, water-cooled furnaces, forced and induced-draft fans, dissolving tanks, mixing tanks, black liquor pump and piping including nozzles, Bailey metering equipment and a number of Airoil burners.

The Savannah project also calls for three oil-fired Stirling boilers with superheaters, airheaters, refractory furnaces—two of which are extension furnaces for burning bark, oil burners, forced and induced-draft fans and Diamond soot blowers.

Day-Labor Methods Vigorously Condemned

Construction is an industry and not a partisan group. It commends those Governmental projects, Federal, State and local, which provide sound, needful structures and facilities. It condemns waste, and realizing that value receivable is difficult on day-labor projects, it throws experienced counsel in favor of the general contract method. This method has proven efficient over a period of years and has demonstrated the wisdom of utilizing private enterprise as far as possible in design, supervision and construction of public works.

According to a "Constructograph" of the Associated General Contractors of America, the total of all Federal, State and local public works has averaged over the last four years only one-half the volume of the average four years previous thereto.

Recreation

WITH the shorter work week and a certain amount of idleness, the need of recreation to fill the increased leisure time is greater than ever. The National Park Service and the Forest Service under the Department of Agriculture have been encouraging states and local communities to develop their recreational facilities. The increased activities in National, State and local parks and camping areas have all been worth while.

A national system of parkways or tourways is being initiated. Eventually, this should connect the major national, state and local parks, scenic and historical centers throughout the nation. The separation of passenger from commercial traffic in certain areas will thus be encouraged and "tourism" in America will be facilitated.

The Outlook

UNDER the guidance of the Construction League of the United States, the construction industry is gradually being coordinated and its intra-industry problems correlated.

In 1929, the Census showed that the construction industry is the second largest in the nation, being next to agriculture. Its operations extend throughout the country. Building aqueducts through the mountains, high span bridges by the mile, flood control, high and low buildings and public facilities in great variety is the sum total of construction activities.

America is not finished. Let us hope it never will be. Therefore, the construction industry faces the future with courage, optimism, and conviction that its accomplishments will surpass the vision of any one of us now living.

THE AMERICAN BUSINESS SYSTEM— On Profit and Loss Basis

It is perhaps natural that when the American business system encounters a period of depression, agitators should pounce on it with great vigor and accuse it of almost every conceivable evil. During such times, business is charged with the responsibility for every wrong.

What is the American business system? It would be difficult to describe it in a word, but certainly its most outstanding characteristic is the element of freedom it offers to men to engage in commercial enterprise, with the idea of rendering a service in the hope of profit, and the fact that it has provided an opportunity for all classes of our citizens, through thrift, industry and integrity, to improve their station in life.

Deep in the heart of almost every American who has any interest in business is the hope that he may own or share in the ownership of some business enterprise which will render a useful service. Being human, he hopes for a profit in such an undertaking. No other country has ever permitted such freedom to the average man. In most nations questions of tradition or ancestry or legal restrictions have set up barriers which the rank and file are unable to surmount. How different in America! The spirit of free enterprise has encouraged even the most humble of men to engage in business. As a result, there have been brought into existence stores, railroads, utilities, automobile factories, banks, and many other useful institutions and services which have raised our standard of living and tended to promote a common welfare.

In the rapid rise we have made to a position of world leadership in commerce and industry, mistakes of course have been made, crimes have been committed, and wastefulness has at times been evident. When a period of depression develops, all these shortcomings are brought into bold relief.

Depressions generally teach us lessons that we seem unable to learn in any other way. Such tuition is expensive, but there is value gained in the experience.

The time has come when business must speak for itself. The people of the nation should be made aware of the fact that the American business system, by giving encouragement to serviceable and profitable enterprise, has created a fund of wealth which has aided in building up university endowments, libraries, and hospitals and in establishing foundations

By

Robert V. Fleming,

President, The American Bankers' Association

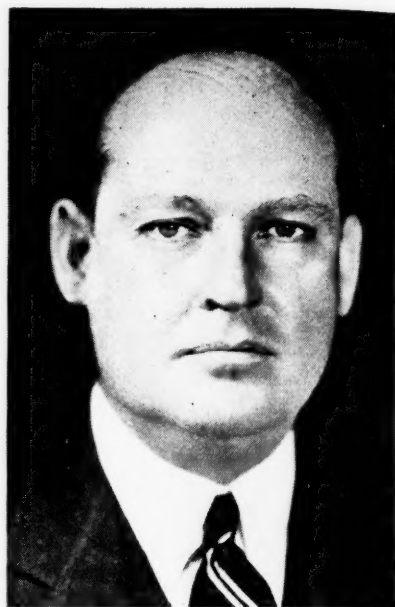
for research through which we are constantly rebuilding and improving America.

The culture of a nation is based in large measure on the earning power of its business organizations. The decay of ancient civilizations came about only after their economic power had crumbled. If we wish to continue to build large social institutions in this country for the benefit of humanity, such achievements must come from the wealth that is first created through business enterprise. The profits arising from a business undertaking are not isolated; they are for the most part reinvested either in the particular business or in some other avenue of useful service. If we destroy the hope of profit for services well rendered, we kill the driving impulse which has brought about our present social and industrial civilization.

When the American business system offers freedom, it cannot offer a guarantee against failure. The freedom to fail under our system is as basic as the freedom to succeed. Many advocates of cure-all panaceas overlook this fact when they rail against the "profit system". Such men would have us believe that the present economic order has been set up by a few business men or corporations who do nothing but reap a profit from their enterprises. They maintain that the profit system should be abolished; they insist that it must be superseded by some sort of public ownership. According to their line of reasoning, profit is an evil thing and should be destroyed.

This is a time when business men

In addition to his important position as president of the American Bankers' Association, Mr. Fleming is president and chairman of the Riggs National Bank of Washington, D. C. He entered that institution's employ in 1907. He successively occupied positions as assistant cashier, secretary, vice president and cashier, first vice president and president. He is a director of the Acacia Mutual Life Insurance Co., Capital Transit Co., Metropolitan Life Insurance Co., of New York, and Potomac Electric Power Co., besides other organizations.



Robert V. Fleming

should remind the public that losses are also present in our business system. As a matter of fact, we do not have a profit system in this country. More accurately, we have a profit and loss system, and in recent years the emphasis has been on losses.

Of 508,000 corporations making income tax reports for 1932, 82,000 or 16%, reported a net income. This net income amounted to a little over \$2,000,000,000. In the same year, 369,000 corporations, or over 72%, reported no net income and had a deficit aggregating nearly \$8,000,000,000. The other 12% of the corporations were inactive, and no income data were reported.

Between 1924 and 1934, there was an average of 1900 failures a month, with a monthly liability exceeding \$45,000,000.

On the other hand, I would not have you believe that the American business system is just one long record of failure. For instance, from 1922 to 1932, American business paid out in cash dividends alone an average of \$5,700,000,000 a year. It must be remembered that for every dollar paid out in interest and dividend, American business paid out between three and four dollars in wages, salaries and pensions.

It cannot be too strongly emphasized that profit is the reward for managerial skill which can avoid the pitfalls inherent in every business enterprise. It goes to those who have initiative, training and character. But, the long record of failures in American business would, I think, convince any one that every business enterprise has inherent in it the possibilities of loss as well as profit, and that profit is the incentive which stimulates people to render greater service in order to justify confidence in what they have to offer.

MODERN BANK POLICIES—

A Viewpoint and Suggestions

By

Elbert S. Woosley,

Vice President, First National Bank,
Louisville, Ky.

A BANK is the only institution in the community which undertakes to guarantee values. It takes the money of its customers and agrees to return it when called for—100 cents on the dollar in one month, in one year or in fifty years. This

Banks Actually Guarantee Values

would be a safe contract if the banks should take the money, deposit it in a vault, charge a service fee and return the

same money when the depositor calls for it.

But in order to function, the bank must take the customers' money, invest it in loans secured by manufactured goods, produce, raw materials, stock, bonds and real estate, all of which fluctuate in price widely and sometimes dizzily. Even character, which supposedly backs these material values, fluctuates. However much these values change, the bank must still be ready to pay the same money it received. Very likely it will be called on to pay when all other values have shrunk to the vanishing point.

Banks were called on to pay in 1930-34 when the value of these things into which money had been converted declined from 363 billions to 247 billions, a depreciation of 116 billions, or over twice the amount of all bank deposits.

In Safety, Stability and Liquidity Savings Account Is Prime Investment

A BANK, if it has savings accounts drawing interest, is the only institution in existence which sells an investment, guarantees a definite and regular dividend and pledges to buy back the investment practically on demand, or fifty years hence, at the same price paid by the customer. There never has been evolved an investment which can equal the savings account in safety, stability and liquidity, advantages which accrue to the customer and call for corresponding responsibility on the part of the banker.

Banks and Government in Role of Lifting Themselves By Own Bootstraps

A bank in an instrument whereby credit is created. Every time the banker makes a loan, unless the proceeds go to pay a debt, he creates that much credit, which is tantamount to issuing that much new currency. Not only are deposits not depleted by the amount of the loan, but they are increased by the amount of the loan. This means that when the cycle of prosperity or inflation starts, loans and deposits increase. Today banks are financing the loans of the Federal government, but every dollar advanced in exchange for government bonds comes back in increased deposits. The net result is that both banks and government are in an unholy, and as far as the banks are concerned, an involuntary partnership engaged in lifting themselves by their bootstraps.

An inverted pyramid of credit and deposits is being built up which will spiral to some unknowable point where it is apt to topple over of its own weight. With the three billions of excess reserves in our banks today, there can be built up an inverted pyramid of credit and deposit inflation of thirty billions of dollars.

The stock market inflation of 1926-29 was built up with one-fifth of the reserves existing today.

It is only fair to say that the bankers of the country demonstrated little resistance to the building up of the credit pyramid of 1926-29, which finally crumbled and wrought in its wreckage more deaths, more suffering, more moral and economic loss than was caused in this country by the World War.

Bankers protested weakly, if at all, against the orgy of borrowing indulged

Elbert S. Woosley



in by individuals, institutions, businesses, municipalities, states and the nation. They were and are still witnesses of, and in many cases participants in, the mortgaging of the income of this country for fifty years ahead.

Correction of Weaknesses in Banking Problem for Bankers to Solve

Whatever faults or weaknesses have existed in banking have been within the four walls of our banks. We have only ourselves to blame for what happened among banks during recent years. Likewise, correction of any weaknesses which have existed will not come from without, through laws and regulations, but from within through better personal management.

The kind of thinking that has been part and parcel of the whole atmosphere of American business has little place in banking. We must dissociate ourselves as a profession from the feverish aggressiveness of American business. We must constantly throw up defenses against the magnificent but dangerous obsession of the American people to make bigness the standard of worthwhileness.

Laws and regulations which are so futile in controlling human nature, will do us little good in periods of stress. The new banking law attempts to shift emphasis from liquidity to soundness. Good management will be slow to turn aside from traditional banking, which has always held liquidity to be an essential of commercial banking. In fact, any regulation or law the purpose of which is to make banking foolproof, should hold us more closely to the straight and narrow way of sound banking. The banker who depends on deposit insurance or the liberalization of discount privileges to keep his bank open in the next period of stress will find himself leaning on a broken reed.

Sound Banking Primary Duty

A bank is not a philanthropic institution. It owes no service which does not pay its way. It has no duty to community or individual which does not comport with sound banking, because sound banking is our primary duty to the public.

(Continued on Page 66)

\$1,600,000 COAL PIER COMPLETED

CONSIDERING the massive construction, the simplicity of operation is the outstanding feature of the newest coal pier on the Atlantic seaboard. Intricate mechanisms move with precision at the touch of a switch lever. Although one huge assembly of machinery, comprising a metal receiving pan, a coal retarding device and a telescopic chute with a combined weight of 350,000 pounds, extends 35 feet out over the water from the main structure, it is moved as easily as a door is opened and closed.

The car dumper is a marvel of well-balanced mechanism. Resting on a reinforced concrete foundation, containing some 6,000 cubic yards of material, supported on 960 piles, the dumper performs its Herculean tasks with no show of strain. Perfect balance is obtained by a system of counterweights—huge, solid blocks of concrete, the largest of which weighs 135 tons. The minimum of electrical energy is thus required.

This pier is that of the Norfolk & Western Railway Company, which for more than half a century always has been prompt in providing the most improved facilities for the transfer of coal from cars to ships. Completed last month at a cost of \$1,600,000, it is known as Pier No. 5, and is situated at Lambert Point, five miles northwest of Norfolk, Va.

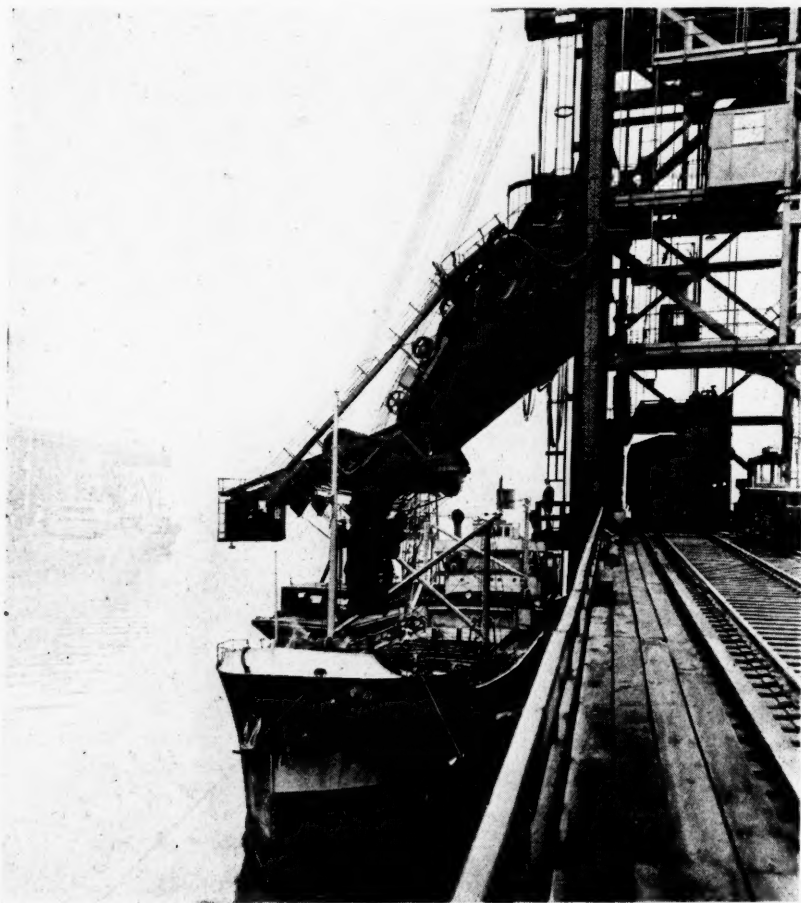
The new facility, designed primarily to handle coal speedily and with a minimum of breakage, is equipped to deliver the fuel from the cars to the ships without a transfer and without dropping the coal at any time, its flow being

controlled with electrically operated devices.

Operating automatically in many respects, the new pier can transfer coal to a ship at a maximum rate of 4,800 tons an hour. Under practical loading conditions, it will be possible to load a vessel of 6,000 tons capacity in about

Newest Cargo Coal Loading Facility Ready For Action

This picture shows a coal car on the platen of the dumper, and pan and telescopic chute over a steamer before beginning loading operation. The operator's precise control of movements is readily understood when the position of the cab is considered



Norfolk and Western's Latest Facility Replete with Devices to Eliminate Breakage of Coal

Coal Can Be Placed On Ships at a Height of Up to 50 Feet Above the Water Line

Special Bunkering Barge Provided to Permit Taking Bunker Coal and Cargo Coal Simultaneously

three hours, and this speed of loading will be accomplished with the fuel transferred to the ship in practically the same condition in which it left the car.

To reduce to a minimum the time which coal-carrying vessels spend in port, a bunkering barge is provided so that a ship may receive its fuel at the same time its cargo is being loaded. The barge can deliver bunkering coal at the rate of 150 tons an hour.

The bunkering barge marks a distinct advance in coal pier operation. Especially built for use with the pier, it is 35 feet wide and 116 feet long and has a total coal storage capacity of 500 tons. The bunkering coal is taken from the barge by means of a bucket hoist and is delivered to the ship alongside through a chute, which is electrically operated.

The new pier, 1,000 feet long and 74 feet wide, is dominated by an elevating car dumper—a steel structure 146 feet high, and a double-track trestle which extends the entire length of the pier. The slip at the pier has a minimum depth of water of 38 feet—deep enough to accommodate the largest ocean-going vessel.

The new pier is served by a storage yard with a capacity of fifty trains of 100 cars each. The large capacity of the yard insures an adequate supply of coal for dumping and prevents delay to ships at the pier.

After the cars are classified in the yard, they are delivered to the gravity yard as needed, moving by gravity across the scales, where the weight is automatically recorded, then to the "barney," which engages the rear coupler of the coal car and pushes it up an incline to the trestle of the pier.

From this point the car drifts down an incline for a distance of 600 feet, its speed being reduced to six miles an hour by an electrically-operated car retarder, remotely controlled. The car then continues down the incline to engage another car retarder which brings it to a stop. An electric pusher—with an extended side-arm, operating on a nar-



General View Of New Pier

This picture shows the viaduct approach to the car dumper, with coal cars moving by gravity down the .9% grade.

row gauge track parallel to the load track—engage the rear corner of the car and pushes it up another incline to the car-dumper.

The dumper has a capacity for unloading forty 120-ton cars or fifty 70-ton cars an hour. It is of the elevating type, the varying height for dumping being 28 feet. The height at which a car is turned and emptied is determined by the size of the vessel being loaded.

After the car is placed on the dumper, it is spotted in position for hoisting by a pneumatic car retarder. The car is securely locked against the wall of the cradle. Just before the car is elevated, a "Wellman coal hood" is clamped on top of the car to hold the load securely. When the car is turned, the hood holds the load until it is automatically released through seven gates, permitting the coal to slide under the hood onto the pan of the coal chute for a short distance until it is halted by a coal retarder.

The width of this pan is sufficient for handling a 120-ton car, and the length extends out over the water 35 feet from the side of the pier. At the outer end of the pan, the width narrows to 4 feet. Suspended from the pan at this point is a telescopic chute, at the end of which are attached double, independent-acting undercut gates.

To receive the coal as it flows from underneath the hood, there is installed on the pan a Gifford coal flow retarder. This consists of a vertical steel baffle plate about three feet high and extending about three-fourths the width of the pan. This baffle plate is substantially insulated with heavy rubber belting to prevent breakage of the coal. As the

coal continues to flow and presses against the retarder, the plate retreats slowly down the pan, and as it moves, it rotates until it has assumed a position parallel to the floor of the pan, permitting passage of the coal underneath it and on to the end of the pan and into the telescopic chute. After all the coal in one car has cleared the retarder, it automatically returns to its original position at the top of the pan.

The chute is telescoped to its minimum length to receive the first coal, with the gates, which are attached to the end, closed. As the coal fills the chute, it is gradually extended until the gates are close to the floor of the ship's hatch. Then the gates are opened and the coal flows into the vessel.

The chute is four feet in diameter and is 48 feet long. It has a swing movement fore and aft of 30 degrees, and a swing movement inshore and outshore of 60 degrees. The double undercut gates may be operated independently, and the circular movement is complete—360 degrees.

A sprinkling device to wet the coal, if desired, is operated at the point where the coal flows from underneath the hood and against the retarder. The capacity of the sprinkling system is 1250 gallons of water per minute.

After the car has been emptied, both the car and the cradle return automatically to the upright position in the frame and are then lowered to the bottom of the dumper. The next oncoming

coal car pushes the empty car off and it returns by gravity to the yard. Car retarders slacken the speed of the car en route, so that it drifts into the classification yard at the proper speed.

Beneath the dumper framework is a room, in which the air is filtered to keep dust out, housing the motors that "make the wheels go round." Two 550 horsepower electric motors are sufficient to elevate the 650,000 pounds vertically. Two other motors, aggregating 550 horsepower, lift the panhoist. Still other motors serve to raise the top level of the pan when adjustment must be made to conform to the height of a ship's deck.

The elevation and emptying of the carload of coal in the car dumper is entirely automatic and six distinct operations are performed without the intervention of an operator. From the time the operator moves the lever starting the operation of the cradle with its 150 ton load until the time the load begins to leave the car, the action of the dumper proceeds without the guidance of a man's hand.

A system of relays, located in the motor-engine room beneath the superstructure perform their work at the proper split second. When one step in the operation is completed, an electrical contact is made, which halts that step and provides current for another motor so that the succeeding step in the operation may be performed.

In coordinating operations, a telergraph system, automatic telephone and a loud speaker system are used. In addition, the new pier is equipped with devices to move a ship indepen-

(Continued on Page 61)

SOUTH'S LEADERSHIP IN GRANITE AND MARBLE INDUSTRY

Elberton Area in Northeast Georgia Makes Industrial History in the Rapid Growth of Quarrying and Finishing Monumental and Building Stone of Remakable Quality and Beauty

FROM Southern quarries come more than 50 per cent of the granite and 60 per cent of the marble produced in the United States. For quality and beauty of finish, Southern granite and marble have received world-wide recognition.

Not only has the South valuable monumental and building stone deposits, but also the advantage of all-year operations, due to comparatively mild winters. This section is becoming the nation's leading granite and marble producing region.

Expansion of granite production in the Elberton, Ga., area features recent and current activity in the industry, the annual production approximating \$2,000,000, compared with \$50,000 annual production 25 years ago. In the past three years granite shipments from Elberton quarries have more than tripled, increasing from 2,383 carloads in 1929 to more than 6,600 carloads last year, not including the output handled by trucks.

Elberton granite has gone into 46 states, Mexico and Canada. Included have been shipments of Georgia granite to Vermont, long famed for its granite.

The quarrying and finishing industry in the Elberton district affords employment normally to about 1200 persons, in 12 quarries and 16 finishing plants. The

By

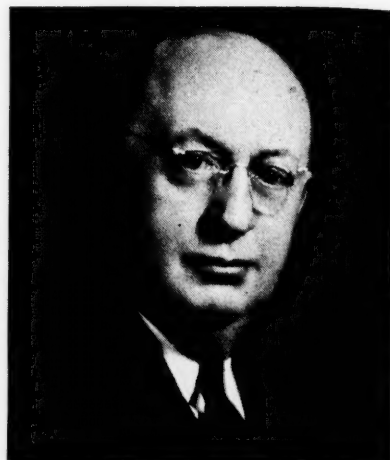
Howard L. Clark

Seaboard Air Line Railway and the Southern Railway, and a network of improved highways provide adequate transportation facilities. A plentiful supply of efficient labor and comparatively cheap power, facilitate production.

Elberton has an almost inexhaustible supply of uniform-grained dark granite that takes a beautiful polish.

Elberton concerns use the latest machinery to cut and fashion the great blocks (some as large as 20 feet square and valued at \$15,000 at the quarry) after which they are cut into smaller blocks and sent to finishing plants where skilled workmen make them into beautiful and enduring monuments and structural stone.

The blocks are taken from the face of the "living stone" by the use of channelling machines and air drills. In "sawing" the blocks into dimension stock for individual jobs, some of the work is done in the quarry, while other blocks are cut up at the finishing plants. Heavy-duty metal strip saws, moving at high speed in a compound of water and steel shot, grind into the granite blocks



B. F. Coggins

A NATIVE of Georgia, Mr. Coggins had the vision and faith in the South that made possible the extensive development of the granite industry in the Elberton area. He is identified with many business enterprises, and owns large acreages in Georgia and other Southern States. His companies own marble quarries in Alabama, Georgia and North Carolina, with modern finishing plants at Elberton, Ga., Atlanta, Ga., Sylacauga, Ala., and Marble, N. C.

at the rate of about 8 inches an hour. Working granite is a tedious process.

The processes involved in polishing,



finishing, carving and lettering the individual pieces of stone are intricate and delicate. Highly-skilled stone cutters—artists in their line — with hand and power tools, many of them operated with compressed air, turn out products to exacting specifications and sizes.

Control of the Georgia Granite Corporation, with large operations at Elberton, was recently purchased by B. Frank Coggins, of Atlanta Ga. Included in the group of companies which have passed to the control of Mr. Coggins are the Oglesby Granite Quarriers, the North Georgia Granite Company, the Southern Quarry Company, the Berkeley Granite Corporation, the Piedmont Granite Company, the Morretti-Harrah Marble Corporation, and the Columbia Marble Company. These enterprises own and operate granite and marble properties in Elberton and Madison Counties, Georgia; Salisbury and Marble, N. C., and Sylacauga, Ala., with plants at Elberton, Atlanta, Sylacauga and Marble.

The estimated value of the Coggins' holdings, including manufacturing facilities, is more than \$4,000,000.

In addition to the quarrying operations and the manufacture of monuments and the production of building stone, the Georgia Granite Corporation and affiliates, furnish rough-cut granite

and marble blocks to finishing plants operated by other interests.

Immediately after Mr. Coggins assumed control of the companies, the following officers were elected:

J. C. Wessinger, Jr., vice president and general manager;
S. C. Spears, vice president;
C. O. Yarbrough, treasurer;
C. H. Hammond, sales manager, Georgia Granite Corp.;
D. R. Ambrosini, sales manager, Oglesby Granite Quarries;

Clois C. Brown, secretary, Southern Quarry Co.;

Charles D'Amico, general superintendent of all quarries, and Frank Sassi, general superintendent of the Elberton granite finishing plant.

A Southern man, B. Frank Coggins, native Georgian, with vision and faith in the South, is responsible for the expansion of an important industry, with a product comparable in texture and quality with the world's best.

In the employment of labor and the creation of wealth, this development is in keeping with traditional American energy and initiative.

"Stone Eternal Quarry"
Elberton, Ga.



Marble, N. C., Quarry





"Green Diamond" Of Illinois Central System

Diesel-powered, articulated train of five cars, accommodating 120 passengers, weighs only 230 tons, about half the weight of a comparable standard car train

PIONEERING IN RAIL TRANSPORT

For Travel Comfort and Convenience

DIESEL-ELECTRIC locomotives, streamlined construction, and the use of high-strength alloy materials to cut weight of rolling stock and facilitate high speed figure prominently in current railroad developments.

Following a 7500-mile exhibition tour, a sleek, Diesel-powered-articulated train built for the Illinois Central System will be put in service between St. Louis and Chicago.

It is a five-car unit, mounted on roller bearings, completely air-conditioned. Built of steel and aluminum, the 330-foot train weighs only 230 tons. It will accommodate 120 passengers.

Marking an innovation in central Mississippi Valley travel the new train will be a rolling laboratory in which will be worked out principles affecting the development of future passenger transportation.

It was built at a cost of approximately \$425,000 at the Chicago plant of the Pullman-Standard Car Manufacturing Co. It is expected to make the 300-mile trip between Chicago and St. Louis at a speed which will enable it to complete a round-trip daily, supplanting two steam trains now required for comparable service.

The power unit, making possible such high speed, contains the main power-generating unit for driving the train and auxiliary oil engine and generator to supply current for lighting, battery-charging, and operating air-conditioning units and kitchen electrical appliances. The power car also provides space for air compressors, heating boiler, batteries, elec-

trical control apparatus and water and fuel tanks.

The power car was built by the Electro-Motive Company at its LaGrange, Ill. plant. The main power unit is a 1200-horsepower Diesel engine built by the Winton Engine Co., of Cleveland, Ohio. Both companies are General Motors subsidiaries. Electrical equipment was furnished by the General Electric Co., Schenectady, N. Y. The heating boiler

was made by the Vapor Car Heating Co., Inc., Chicago, Ill.

Double windows of shatter-proof glass exclude noise and dust. Lighting is indirect. Each passenger car has two radio loud speakers. The kitchen-lounge-observation car has a modernly equipped kitchen with complete dry ice refrigeration.

The Edward G. Budd Manufacturing Co., of Philadelphia, Pa., which is finishing an order for four new trains for the Burlington R. R., last month received the contract from the Atchison, Topeka & Santa Fe Railway for an eight-car, light-weight, stainless steel train that will cut fourteen hours off the present running time between Chicago and Los Angeles.

The new train for the Santa Fe will weigh about half as much as a comparable conventional train. Construction will represent a radical departure from normal practice in that by the use of the "shotweld" process each car will be virtually a one-piece steel unit.

With the exterior streamlined in the modern mode, the interior layout is designed to offer a new standard of comfort and convenience. The new construction method will permit wider inside dimensions than those of standard cars.

The Santa Fe train, which will be drawn by a Diesel-electric locomotive, built by the Electro-Motive Corp., of LaGrange, Ill., will cover the 2225 miles between Chicago and Los Angeles in 39 hours, 45 minutes, compared with the present schedule of 53 hours, 45 minutes.

Freight Loadings Mounting

Building Material Shipments in Spotlight

FREIGHT car loadings in the second quarter of 1936 are expected to be about 9.5 per cent above actual loadings in the same quarter in 1935, according to estimates compiled by the Thirteen Shippers' Regional Advisory Boards.

On the basis of these estimates, freight car loadings of the twenty-nine principal commodities will be 4,984,325 cars in the second quarter of 1936, compared with 4,551,737 actual loadings for the same commodities in the corresponding period in 1935.

All of the Thirteen Shippers' Regional Advisory Boards estimate an increase in the loadings for the second quarter of 1936 compared with the same period in 1935.

COMPLETE LARGE SUGAR WAREHOUSE

COMPLETION of a new sugar warehouse at Baltimore, for the Coca-Cola Company marks another step in enlarging this branch's syrup manufacturing facilities, designed to serve domestic and foreign consumption.

Along with the erection of the new storage space, additional equipment has been installed and other changes made, including the transfer from Atlanta to Baltimore of the research department of the company, in charge of flavoring and chemical formulas.

Baltimore thus becomes headquarters for this highly important phase of Coca-Cola operations. The laboratories are under the direction of Dr. W. P. Heath, vice president in charge of chemical control. The research department equipment comprises the most up-to-date facilities.

Guided by the principle that laboratory control of the product is equally as important as the formula in maintaining quality, every ingredient entering into the manufacture of the product is tested for strength, color and purity.

Furthermore, twenty-two additional tests are made as the materials pass progressively through various stages of manufacture to insure the quality of the drink and strict uniformity of output.

The new warehouse is a concrete, brick and steel structure, 356 feet long and 215 feet wide, providing approximately 76,600 square feet of floor space. In construction it is like the two-story brick building erected in 1920 at 1215 East Fort Avenue for storage and production purposes when the company moved from the Candler Building.

Built on concrete piles furnished by the Raymond Concrete Pile Co., of Baltimore and New York City, the construction offered a unique opportunity for building "from the inside out". This was necessitated by the fact that the plot, triangular in shape, was about twelve feet below the surrounding ground and the adjacent railroad sidings. The construction company evolved a system of waterproofing walls and floors as soon as they were laid. It was necessary to make the entire building damp-proof because of the product to be stored there.

Approximately 800,000 bricks went into the building, and more than 600 tons of steel. Concrete poured totaled 4500 cubic yards. The roof of the warehouse totaled 80,000 square feet.

This new warehouse is equipped with the very latest devices for heating, temperature control, fire prevention and con-

trol, and an electric tramrail system for the handling and transportation of the materials within the warehouse and from the warehouse to the syrup making machines in the factory.

The tramrail installation, which is one of the outstanding systems of its kind in the South, consists of 3100 feet of straight track, 34 rail curves, 360 feet straight arch beam, 5 arch beam curves, 8,000 feet of conductor bar, 17 sliding type switches, 2 type ETHDOC 2500 carriers with 2 motors each, providing a traveling speed of 600 feet per minute, a 30-foot lift, 60 feet per minute hoisting speed. To serve this equipment one motor-generator set was installed. The switches are reeved for remote control. The system was installed by the Cleveland Tramrail Division of the Cleveland Crane & Engineering Co., of Wickliffe, Ohio.

The efficiency of the system is raised by use of a trunk line for conveying materials from the warehouse to the manufacturing building. The hoists are

designed for high speed and efficiency in loading, transporting and unloading bulk commodities. The one-man hoists are equipped with a loading platform which can be raised or lowered to any desired level while the car is moving at full speed. Each can handle 7,000 bags or 350 tons of sugar in an eight-hour day.

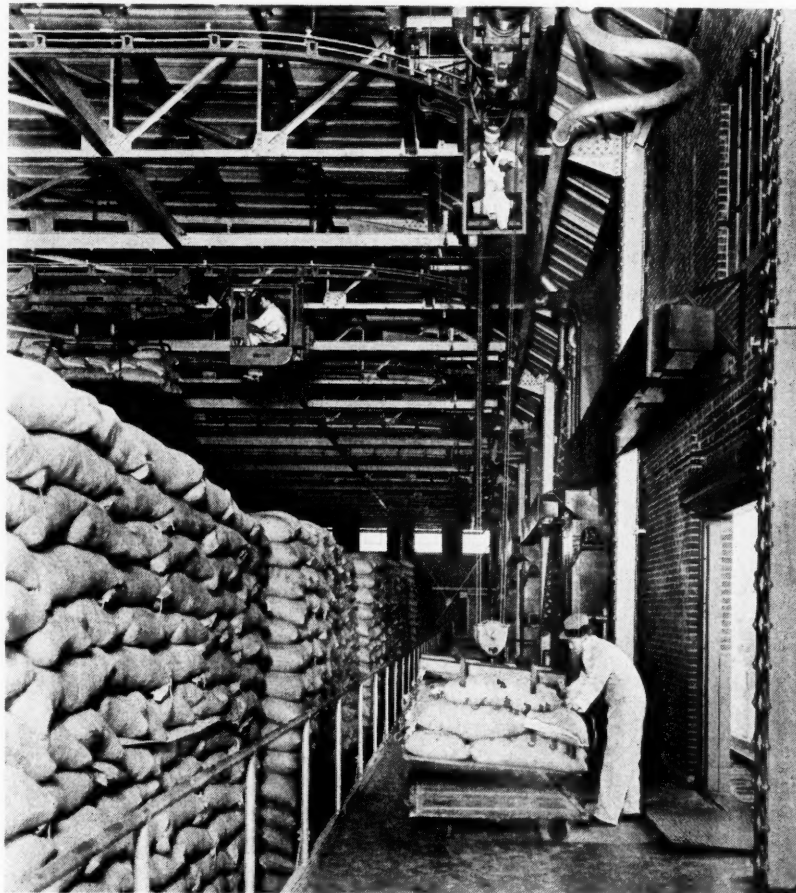
Two tracks, one at either side of the warehouse, extend the full length of the building. These are connected by cross-tracks spaced twenty feet apart. The sugar is delivered by the tramrail cars direct to the factory, where it is transferred into enclosed sanitary chutes leading to the mixing tanks. Three mixing tanks, each with a capacity of 5000 gallons are located on the first floor of the manufacturing building.

The warehouse was designed by Robert & Company, Inc., architects and engineers, Atlanta, Ga. H. F. Wilds, engineer, represented the owners. The Cogswell Construction Co., Baltimore, was the general contractor.

(Continued on page 64)

Details Of New Sugar Storage Warehouse

Interior view of Baltimore warehouse of the Coca-Cola Company shows how sugar is unloaded from railroad cars onto the movable skids, pushed inside the building onto the platform under the rail, where the pallet on which the sugar is piled is picked up, 20 bags at a time, by the Tramrail carrier.



\$311,405,000 IN CONSTRUCTION AWARDS IN FOUR MONTHS

CONTRACTS awarded for building construction and engineering projects in the sixteen Southern States during the first four months of this year, aggregating \$311,405,000, set a record for the comparable period in the past ten years.

Compared with the total of \$143,587,000 of contracts awarded in the corresponding period of the preceding year, the awards to May 1, of this year, show a gain of 117%.

Awards aggregating \$78,210,000 in April, represent a five-year high. Last month's total shows a gain of more than 29% compared with the total of awards in the preceding month and of 137% compared with the April, 1935, figure.

The outstanding development in the construction industry in the South last month, was the remarkable increase in dwelling, apartment house and hotel construction. Awards for dwellings, including a number of major housing projects financed with Federal aid, ran to \$5,455,000, bringing the January to April figure to \$8,579,000.

Contracts let for apartment houses and hotels during April totaled \$4,072,000, compared with awards of \$4,507,000 for such buildings in the first three months of the year. The four-month total for residential construction in the South exceeds \$11,765,000.

In addition to the building of new hotels, costing up to \$500,000 each, hostelry in all parts of the South are being modernized and improved.

The Rockefeller interests started work last month on a \$500,000 hotel at Williamsburg, Va. The du Pont interests are spending \$150,000 for a club house at Wakulla Springs, Fla.

Eighty-seven separate hotel and apartment house projects were placed under contract last month in the South and Southwest.

A notable spurt was also registered in construction of sewers, drainage and waterworks during April, awards aggregating \$8,778,000, which compares with \$8,919,000, representing contracts let for such projects in the first three months of the year. Thus to May 1, contracts let for sewer, drainage and waterworks called for an outlay of \$17,697,000.

Industrial activity continues on a major scale in the States from Maryland to Texas, as is evidenced by the April total of \$15,435,000 in awards. The four-month total for industrial plant expansion runs to \$97,071,000, representing a gain of more than 275% compared with \$25,760,000, of such contracts let in the first four months of the preceding year.

The railroads are actively buying rails, track accessories, new locomotives, freight cars and specially designed loco-

SOUTHERN CONSTRUCTION ACTIVITY April, 1936

	Contracts Awarded	Contracts to be Awarded
GENERAL BUILDING		
Apartment and Hotels	\$4,072,000	\$3,349,000
Association and Fraternal		20,000
Bank and Office	498,000	236,000
Churches	446,000	660,000
Dwellings	5,455,000	3,455,000
Stores	1,151,000	1,294,000
	\$11,622,000	\$9,014,000
PUBLIC BUILDINGS		
City, County, Govern- ment and State	\$11,841,000	\$27,599,000
Schools	3,408,000	13,549,000
	\$15,249,000	\$41,148,000
ROADS, STREETS and PAVING		
	\$24,501,000	\$61,570,000
INDUSTRIAL and ENGINEERING PROJECTS		
Drainage, Dredging and Irrigation	\$ 470,000	\$13,900,000
Filling Stations, Garages, etc.	628,000	1,782,000
Industrial Plants	15,435,000	70,111,000
Levees, Revetments, Seawalls, Dikes, etc.	1,527,000	4,393,000
Sewers, Drainage and Waterworks	8,778,000	2,890,000
	\$26,838,000	\$93,076,000
TOTAL	\$78,210,000	\$204,806,000

motives and complete trains. Repair and replacement work on principal systems is increasing.

The textile industry is again in the spotlight. Last month contracts were let for extensions and the installation of new machinery for a woolen mill in Rossville, Ga., estimated to cost \$400,000. An Athens, Ga., hosiery mill began work on an expansion program calling for an outlay of \$400,000. Improvements put under way at Lincolnton and Greensboro, N. C., Mills will cost \$100,000 each.

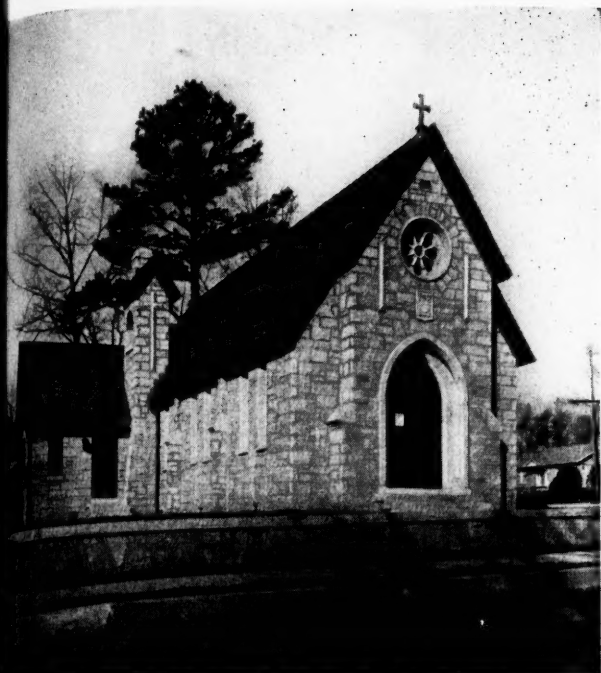
A diversity of industrial projects was let to contract during April. The Capital Transit Co., Washington, is erecting a bus garage to cost approximately \$175,000. A Roanoke, Va., radio station has started improvements to cost \$150,000. A new bottling works for Washington, D. C., entails an outlay of \$100,000. A hosiery mill addition at Greensboro, N. C., involves an expenditure of \$100,000. A cotton compress and storage warehouse at the port of Brownsville, Tex., represents an investment of \$200,000. An auto-service building in Norfolk, Va., will cost \$100,000.

Privately financed building operations undertaken in the first four months of the year, at a cost of \$27,041,000, compare with \$19,740,000 of like awards in the corresponding period of 1935.

Practically every section of the South and Southwest shares in the current forward movement in the building industry.

SOUTHERN CONSTRUCTION ACTIVITY First Four Months, 1936

	Contracts Awarded	Contracts to be Awarded
General Building		
Apartment and Hotels	\$ 8,579,000	\$10,399,000
Association and Fraternal	166,000	980,000
Bank and Office	1,148,000	1,391,000
Churches	940,000	3,086,000
Dwellings	11,765,000	10,669,000
Stores	4,443,000	5,857,000
	\$27,041,000	\$32,382,000
Public Buildings		
City, County, Government and State	\$48,580,000	\$86,575,000
Schools	26,953,000	39,021,000
	\$75,533,000	\$125,596,000
Roads, Streets and Paving		
	\$85,678,000	\$137,106,000
Industrial and Engineering Projects		
Drainage, Dredging and Irrigation	\$ 2,336,000	\$74,398,000
Filling Stations, Garages, etc.	1,840,000	3,270,000
Industrial Plants	97,071,000	189,129,000
Levees, Revetments, Seawalls, Dikes, etc.	4,209,000	5,543,000
Sewers, Drainage and Waterworks	17,697,000	34,284,000
	\$123,153,000	\$306,624,000
Total	\$311,405,000	\$601,708,000



CHAPEL OF ST. ANDREW, CLEMSON COLLEGE, S. C.
Built of Blue OGLESBY Granite

PRESENT Day Conditions require a greater degree of Permanence and a more Refined type of Beauty in Building Materials.

The USE of Blue OGLESBY Granite, either dressed or rough ashlar, enables the architect to embody refinement, practicability and economy in his plans; and the owner a Beautiful Building which will endure for many generations.

Consider the lasting qualities of your Building and save money through the use of

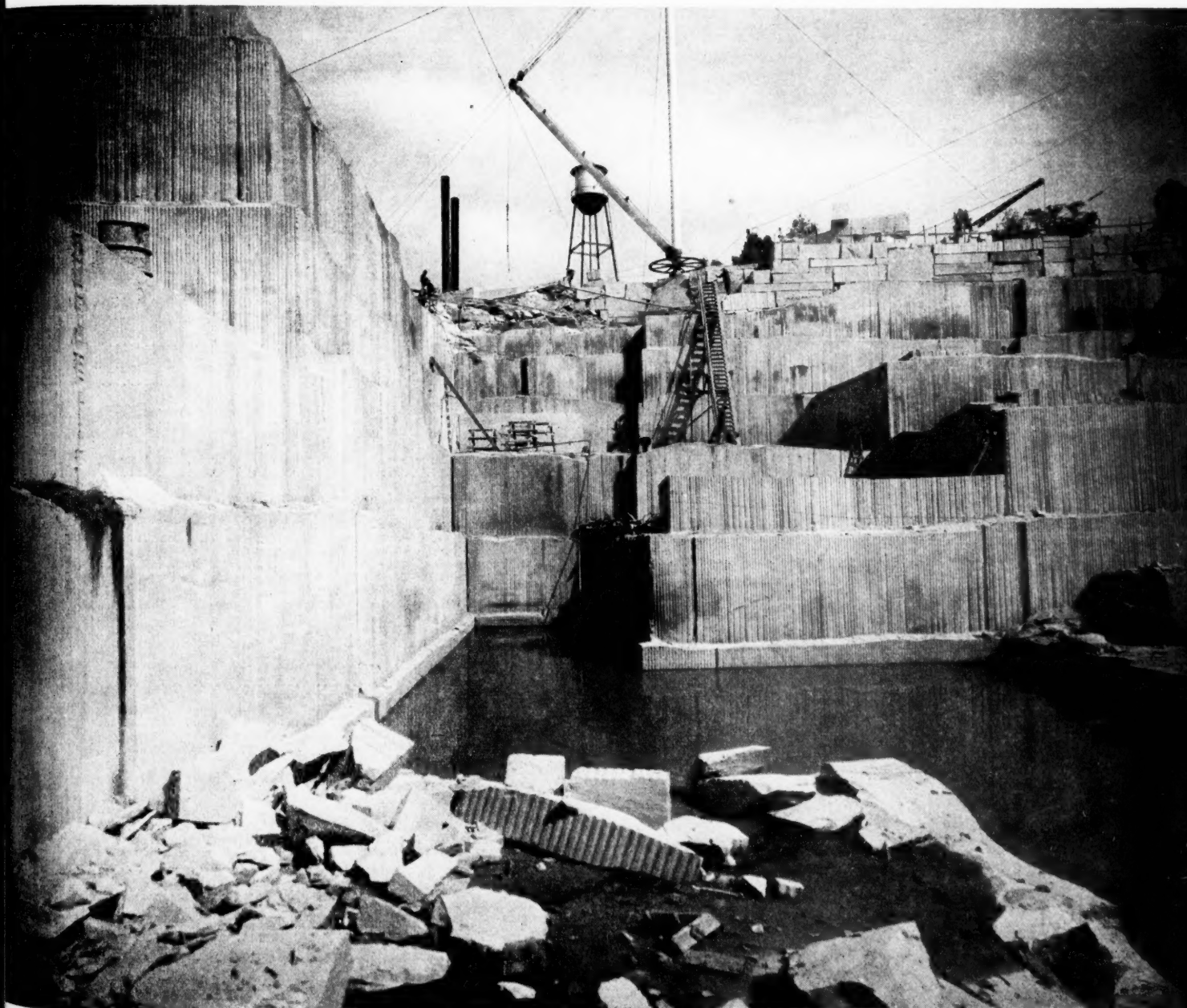
BLUE OGLESBY GRANITE

"Preferred for Better Memorials since 1893"

QUARRIED BY

OGLESBY GRANITE QUARRIERS
ELBERTON, GEORGIA

WRITE FOR FREE INFORMATION



VIEW OF OGLESBY QUARRY

Some Representative Projects In The South Last Month

Proposed Construction

Ala., Montgomery—City	
City hall; Frank Lockwood, Inc., Archts.	\$490,000
Fla., Fort Lauderdale—R. H. Goer	
Hotel addition; L. Murray Dixon, Archt.	150,000
Fla., Fort Lauderdale—G. H. Kittredge, Detroit, Mich.	
Precooling plant for port	100,000
Fla., Fort Pierce—Fort Pierce Growers' Association	
Selected site for packing plant	100,000
Fla., Miami—Castlereagh Corp., St. Louis, Mo.	
Apartment building; William F. Brown, Archt. ...	100,000
Fla., Miami Beach—Euclid Building Corp.	
Three-story hotel and stores; R. A. Bolsham, Engr.	100,000
Fla., Pensacola—U. S. Naval Air Station	
Repairs and extensions	250,000
Ga., Albany—Cudahy Packing Co., Chicago, Ill.	
Packing plant	500,000
Ga., Cordele—Crisp County Board of Education	
Rebuilding and repairing school; W. Elliott Dun-	
woody, Archt., Macon	150,000
Ky., Louisville—Greyhound Terminal Co.	
Bus station; Wischmeyer and Arrasmith, Archts. ...	300,000
Md., Salisbury—Treasury Dept.	
Post office extension and remodeling	195,000
Miss., Tupelo—Commonwealth Fund, New York City	
Hospital; H. C. Pelton and James G. Rogers,	
Archts., New York City	300,000
Missouri—Current River Power Co., Kansas City	
Power dams in Ripley, Carter and Shannah Counties	2,000,000
Mo., St. Louis—City, Baxter L. Brown	
Soldier's memorial, Plaza Comsn., c/o Mauran, Rus-	
sell & Crowell, Archts.	1,000,000
Mo., St. Louis—Board of Aldermen	
Fire engine houses	250,000
Mo., St. Louis—Delmar Development Co.	
Construct colonial duplex dwellings	500,000
N. C., Charlotte—School board, Dr. J. S. Gaul, Chmn.	
Schools	585,000
N. C., Lincolnton—Boger & Crawford Spinning Mills	
New building and additional machinery (est.)	150,000
Okla., Bristow—City	
Municipal power plant; W. R. Holway, Tulsa, Engr.	275,000
Okla., Enid—City	
Waterworks	140,000
Okla., Holdenville—Mid-Continent Petroleum Corp.	
Natural gasoline extraction plant	100,000
S. C., Beaufort—William M. Bennett of Woodbury, Conn.,	
and Associates	
Phosphate rock mine development	500,000
Tenn., Chattanooga—Reynolds Metals Co.	
May improve plant	300,000
Tenn., Knoxville—Swift & Co., Chicago, Ill.	
Acquired for ice cream and butter plant	100,000
Tenn., Tate Spring—M. D. Arnold, Jr., Knoxville, Tenn.,	
and Associates	
Fireproof hotel and cottages	200,000
Tex., Corpus Christi—Corpus Christi-San Angelo Rail-	
road Co.	
350-mile line from Corpus Christi to San Angelo ...	1,025,000
Tex., Houston—Shell Petroleum Corp.	
Docks, new refinery unit and overhauling	3,000,000
Tex., Houston—James H. Edmonds	
Seventy-six bungalows	350,000
Tex., Houston—City	
Municipal exposition and convention hall; Alfred C.	
Finn, Archt.	1,000,000
Tex., Houston—Continental Can Co.	
Extensions to plants at Memphis, Tenn., Baltimore,	
Md., Wheeling, Va., and Houston, Tex., part of	
\$6,000,000 nation-wide program (est.)	500,000
Tex., Orange—Orange County Commissioners	
New court house; C. H. Page, Archt., Austin	187,000
Tex., San Antonio—Board of Education	
Junior high school; Phelps & Dewees and Leo M. J.	
Dielmann, Archts.	185,000
Virginia—Department of Interior	
Improvements in Shenandoah National Park	1,425,000
Va., Hopewell—Treasury Dept.	
Post office	100,000
Va., Richmond—University of Richmond	
Library, Carneal, Johnston & Wright, Archts.	300,000
Va., Smith Mountain—City of High Point, N. C.	
Hydro-electric power project on Roanoke River ...	8,000,000
W. Va., Charleston—Kanawha County Board of Educa-	
tion	
School expansion program	2,000,000
W. Va., Charleston—Union Carbide & Carbon Co., New	
York City	
General expansion program including erection of	
\$6,000,000 plant in Southwest for manufacture of	
chemicals; total expenditures \$20,000,000 (est.) ...	10,000,000
W. Va., Nitro—Viscose Co., Marcus Hook, Pa., and New	
York City	
Rayon yarn plant (est.)	1,000,000

Contracts Awarded

Ala., Birmingham—City	
Industrial water system; pipe—Chicago Bridge & Iron	
Works, and Ingalls Iron Works	\$1,236,000
Ala., Florence—Lauderdale County Board of Education	
Rhodesville and Central High School buildings (WPA)	120,000
Ala., Mobile—U. S. Engineers, War Dept.	
Harbor work; United Dredging Co., Contr.	104,000
Ark., Little Rock—City	
Sewer improvements; Drainage Construction Co., El	
Paso, Tex., and G. C. McEachin Construction Co.,	
Little Rock, Ark., Contrs.	520,000
D. C., Washington—Capital Transit Co.	
Bus garage; C. H. Tompkins Co., Contr.	175,000

D. C., Washington—Washington Coca-Cola Bottling Works	
Plant addition; Davis & Platt, Inc., Contr.	100,000
D. C., Washington—Gelman Construction Co.	
Apartment building	100,000
D. C., Washington—U. S. Engineer Office	
McMillan pumping station; Industrial & Piping Engi-	
neering Co., Baltimore, Md., Dravo-Doyle Co., Pitts-	
burgh, Pa., and Industrial Power Equipment Co.,	
Baltimore, Md., Contrs.	280,000
Fla., Jacksonville—Norwood Nelio Rosin Plant	
Addition; Ingalls Iron Works Co., Birmingham, Ala.,	
and A. L. Clayton, Jacksonville, Fla., Contrs.	100,000
Fla., Miami—Hotel, Ocean Drive and Sixth St.	
8-story, 100 rooms; Prufert-Wein Construction Co.,	
Contr.	250,000
Fla., Miami Beach—Peter W. Miller	
Hotel; O'Neill-Orr Building Corp., Contrs.	102,000
Fla., Miami Beach—Roy F. France, Archt.	
100-room hotel; Meade Construction Co., Contrs.	100,000
Fla., Miami Beach—Braznell Estate	
Hotel; Carl Green, Contr.	200,000
Fla., Wakulla Springs—Edward Ball, Jacksonville, Fla.	
Erecting club house, etc.	150,000
Ga., Athens—Athens Hoisery Co.	
New hoisery units; Daniel Construction Co., Anderson,	
S. C., Contrs.	400,000
Ky., Lebanon—John A. Wathen Distillery Co.	
Enlarging plant	100,000
La., New Orleans—City Sewerage and Water Board	
Sewer improvements; John Riess & R. P. Farnsworth &	
Co.; J. B. McCrary & Co., Atlanta, Ga.; Jules A.	
Saunee; Equitable Equipment Co.; Westinghouse	
Electric & Manufacturing Co.; U. S. Pipe & Foundry	
Co., Birmingham, Ala.; National Cast Iron Pipe Co.,	
Birmingham, Ala., and Cahn Bros. & Ryder, Inc.,	
Contrs.	535,000
Md., Baltimore—Baltimore & Ohio Railroad	
Steel rails; Carnegie-Illinois Steel Co.; Bethlehem Steel	
Co., and Illinois Steel Co.	1,000,000
Md., Cheltenham—U. S. Navy Dept.	
Naval radio receiving station; Doyle & Russell, Rich-	
mond, Va., Contr.	172,000
Miss., Amory—Methodist Congregation	
Rebuilding burned church; W. P. Chasstange, Jack-	
son, Miss., Contr.	100,000
Mo., Kansas City—City	
City hall; Swenson Construction Co., Gen. Contr.	1,497,000
Mo., University City—All Saints Roman Catholic Church	
New Building; Henry P. Hess, Archt.	100,000
N. C., Canton—City	
Waterworks; A. H. Guion, Charlotte; G. W. Young,	
Canton, N. C.; W. B. Wilson & Co., Asheville, Contrs.	
N. C., Greensboro—Mock, Judson, Voehringer Co. of North	
Carolina, Inc.	
Hoisery plant additions, George W. Kane Co., gen-	
eral contractors	100,000
N. C., Wilmington—Treasury Dept.	
Post office building; Algernon Blair, Montgomery, Ala.,	
Gen. Contr.	250,000
Okla., Enid—Enid Ice & Fuel Co.	
New plant; McMillan Construction Co., Contrs.	100,000
Tenn., Jackson—City	
Waterworks; M. & Q. Construction Co., Nashville,	
Goulds Pump Co., Seneca Falls, N. Y., Fairbanks-	
Morse & Co., St. Louis, Mo.; Curtiss Plumbing Co.,	
Jackson, Contrs.	160,000
Tenn., Knoxville—Tennessee Valley Authority	
Steel towers for transmission lines; American Bridge	
Co., Pittsburgh, Pa.	136,000
Tenn., Memphis—City	
Hyde Park negro school; Forecum-James Co., Dyers-	
burg, Tenn., Gen. Contr.	143,000
Tenn., Nashville—Nashville, Chattanooga & St. Louis	
Railway	
Steel and accessories; Tennessee Coal, Iron & Railroad	
Co.	\$162,000
Tex., Austin—Bureau of Reclamation	
Arnold dam and power plant, Colorado River project	
processing sand and crushed rock for Arnold and	
Hamilton dams; Knudsen Co., Boise, Idaho; Case Con-	
struction Co., and Austin Bridge Co., Contrs.	2,500,000
Tex., Brownsville—Aransas Compress Co.	
Started work on compress	200,000
Tex., Orla—Red Bluff Water Power Control District	
Hydro-electric plant; S. Morgan Smith & Co., York,	
Pa., General Electric Co., Schenectady, N. Y.; Chis-	
holm-Moore Hoist Corp., Tonawanda, N. Y., and R.	
E. McKee, El Paso, Tex., Contrs.	150,000
Tex., Wichita Falls—Junior College District, C. H. Clark,	
president	
Junior College building; Thomas Bates & Sons, Dallas,	
Gen. Contrs.	250,000
Va., Fredericksburg—Treasury Dept.	
Post office; Lundberg-Richter Co., Liberal, Kansas,	
Contr.	100,000
Va., Norfolk—City Place Corp.	
Auto service building; C. J. Lindemann, Contr.	100,000
Va., Norfolk—Seaboard Air Line Railway	
Phosphate cars; Pullman Car & Manufacturing Co.,	
Bessemer, Ala.	300,000
Steel rails and accessories; Bethlehem Steel Co., Ten-	
nessee Coal, Iron & Railway Co., and Weir-Kilby	
Co., Contrs.	182,000
Va., Roanoke—Norfolk & Western Railway Co.	
Steel rails; Carnegie-Illinois Steel Corp.; Bethlehem	
Steel Co.	550,000
Va., Roanoke—Station WDBJ	
Radio plant improvements	150,000
Va., Williamsburg—Williamsburg Restoration, Inc.	
New hotel; Todd & Brown, Inc., and John Lowry, Inc.,	
Contrs.	500,000

CANDY. An Atlanta candy company promotes sales by telephone preceding Christmas, Mother's Day, etc. Results have been very satisfactory, with costs averaging less than 2%. Recently, 41 Long Distance calls, costing \$32.70, brought orders totaling \$1664.74.

CHEMICALS. The sales manager of a Los Angeles chemical firm, during a two-hour stop-over between trains in Tucson, Arizona, invested \$9.50 in telephone calls to other Arizona cities, and secured \$686.85 worth of business.

"But our Business is different"

AIRPLANES. An airplane sales service at Roosevelt Field, Long Island, sold \$11,000 worth of new and used airplanes by means of Long Distance telephone calls, at a cost of \$30.

WOOD TANKS last from six to forty years. But a Philadelphia wood tank manufacturer, covering New England from key towns by telephone, quickly increased his active customer list from 80 to 265. One trip produced 9 direct orders and 50 subsequent orders. A \$3000 sale resulted from two Long Distance calls costing less than a dollar.

LENSES. After other methods had failed, a Dayton lens company telephoned ten delinquent accounts within a radius of 400 miles, collected \$2500 from seven of them. The net cost was less than 2%.

CORN. A Cleveland grain company writes: "Long Distance telephone service is a vital feature of our business. Recently a rush call to Chicago sold 150,000 bushels of corn in less than three minutes. The telephone cost was only \$1.45."



You may have thoroughly sound reasons for believing that your business is different. But hundreds of "different" businesses have found that Long Distance telephone service fills a fundamental need. . . . It takes busy men North, East, South, West, at will. It cuts through crowded lobbies, gets attention, gets results. It finds prospects and follows them up. It makes appointments and makes sales. . . . Put Long Distance to work this week and watch results!

IRON, STEEL AND METAL MARKET

STEEL production reached 70 per cent of capacity last month, the best in six years. The operating rate continued to advance following the steady rise during the first quarter of the year and despite the lower structural steel bookings in March.

Demand for heavier forms at the close of April counter-balanced the downward tendency in lighter products, especially to supply the automobile trade. Tin plate production was the highest for any class of steel with operations averaging 85 to 90 per cent of capacity, while sheet and tin plate manufacture was around 70 to 75 per cent of capacity. As steel producers are reported to be adding to stocks, ingot production probably will be maintained near the present level for awhile. Some recession in steel activity is looked for as summer advances.

Substantial Orders Ahead

The industry is expected to have a good second quarter business. Many plants have orders ahead for the next three months to keep them at present activity. Recently there has been more optimism in evidence than for several years. Pig iron and pipe producers likewise have reason to be more encouraged with the outlook. In the Birmingham district, an anticipated 15 to 25 per cent increase in pig iron production this year will mean the difference between red and black ink operation.

Price Stability

With the industry in a more satisfactory position as to operation due to greater demand, price stability is the paramount need for increased business to be handled at a profit. Should unwarranted price cutting become a general practice it would undermine the gains that have been made by the industry during the past year. This question has given leaders in the industry more concern than the fluctuations in operating capacity and demand in recent months.

Steel Scrap Market

There have been recent slight declines in steel scrap prices although yards in some districts have less stock on hand. No actual shortage exists but supplies are low. This should mean that if the steel operating capacity remains at present levels of around 70 per cent, steel scrap prices should advance, as the export movement is still heavy.

Railroad Buying

Additional business for the industry was created by increased railroad purchases. Railroads have bought about 480,000 tons of rails since the first of the year, about 120,000 tons coming from Alabama mills. Rail purchases last year totaled only 495,000 tons.

One of the larger orders in April was for 40,000 tons of rails by the Chicago, Rock Island and Pacific lines which went to the Carnegie-Illinois Steel Corp., the Inland Steel Co., and the Colorado Fuel & Iron Co. The Chicago & Eastern Illinois placed orders for 6,000 tons of rails. The Erie Railroad bought 500 all-steel box cars from the American Car & Foundry Co., 200 all-steel automobile cars from the Magor Car Corp., Passaic, N. J., and 100 all-steel automobile cars from the Greenville (Pa.) Steel Car Co. The Pacific Fruit Express Company, controlled by the Union Pacific Railroad Co. and the Southern Pacific Company, placed an order for 1,500 refrigerator cars, 500 each to the Pullman-Standard Car Manufacturing Co., American Car & Foundry Co., and Pacific Car and Foundry Co.

The Missouri Pacific and the Chesapeake & Ohio railroads are expected to enter the market for more than 7,000 cars. The steel industry has been encouraged by the greater interest of the railroads in buying for they are in need of rails, locomotives, cars, equipment and repairs of all kinds.

Steel Plant Expansion

Contract was let last month to the Mesta Machine Co. for the \$25,000,000 continuous strip mill for the Jones & Laughlin Steel Corporation, Pittsburgh. Motors, generators and other electrical equipment were awarded to the General Electric Co.

The Republic Steel Corporation acquired all stocks and bonds of Niles (Ohio) Steel Co. and plans improvements and expansion of the plant.

Announcement was made that the United States Steel Corporation would unify the properties and operations of the American Sheet & Tin Plate Co. and the Carnegie-Illinois Steel Corporation. It is proposed to merge the Allegheny Steel Co. and the West Leechburg Steel Co. The lease for 20 years by the Sheffield Steel Corporation, wholly owned subsidiary of the American Rolling Mills Company, of the Sand Springs (Okla.) steel plant, and preparation to make im-

mediate repairs for placing it in full operation, was also among the April developments.

Formal opening of the Bethlehem Steel Co.'s new "Bethanized" wire and fence mill, a part of Bethlehem's \$30,000,000 program of new facilities for the manufacture of consumer goods to be completed this year, took place at Johnstown last month. The mill makes a new type of galvanized wire, with a mirror-finish similar to chromium, under an electrolytic process designed to give rust resistance.

Outlook for Reinforcing Steel

Problems and outlook for the reinforcing steel industry were discussed by mill representatives and fabricators at the twelfth annual meeting of the Concrete Reinforcing Steel Institute at Hot Springs, Va. "Changing the Scene in the Reinforcing Steel Industry" was the subject of the opening address by N. J. Clarke, vice president in charge of sales, Republic Steel Corporation, Cleveland. Other topics presented were "What the future holds for Reinforced Concrete Construction" by Commander Ben Moreel, Navy Department, Washington; "Marketing Problems in the Reinforcing Steel Industry" by O. W. Irwin, manager Concrete Bar Bureau, Carnegie-Illinois Steel Corporation, Pittsburgh.

New officers elected for the year 1936-37 are: President—E. W. Langdon of Joseph T. Ryerson & Son, Inc., Chicago; vice presidents—James F. Curley, vice president, Concrete Steel Company, New York City and Kenneth D. Mann, executive vice president, Truscon Steel Company, Youngstown, O.

Deep Well Pump

The addition of a new deep well pump to the Burks line was recently announced by The Decatur Pump Co., Decatur, Ill. A feature is a positive straight-line motion of crosshead without the use of guides. The pump is unique in design, being engineered for close precision in manufacturing to insure performance and efficiency. Bearings are hardened, and ground steel shafts operate in honed cast iron boxes, each one so designed that the load is applied centrally between supports. Power is supplied by an electric motor or high-speed gasoline engine mounted above the gear case. The unit is suitable for use with either single acting or double acting cylinders.



ACCURACY OF CONTROL HERE

MEANS *tight, durable* GALVANIZING

THE accuracy with which the temperature of the galvanizing bath is controlled, coupled with extremely careful preparation of the sheets for galvanizing, results in an evenly distributed, evenly spangled, tightly adherent coating on Bethlehem Galvanized Sheets.

This tightly bonded coating stands up to the severest of bending operations in the fabricating of duct work and other applications in which double-seaming is required. Its heavy weight affords maximum weather protection as roofing and in other exposed applications.

The base metal is so uniformly soft and ductile that it withstands the sharpest bends and even stretching without cracking or strain. Bethlehem Galvanized Sheets consistently have the properties, both in their coating and steel, that assure low fabricating costs and long, satisfactory service in a wide range of applications.

Beth-Cu-Loy for Rust-Resistance

When a metal of inherent powers of rust-resistance is desired for exposed applications Bethlehem Galvanized Sheets of Beth-Cu-Loy copper-bearing composition afford extra years of life at small added cost. Disinterested tests have shown that a 0.20 to 0.30 per cent copper content, as in Beth-Cu-Loy, more than doubles the life of steel in weather-exposed applications.

BETHLEHEM STEEL COMPANY

GENERAL OFFICES: BETHLEHEM, PA.



LUMBER NEWS

OF THE MONTH

Texas Forest Situation Analyzed

Survey Reveals Plentiful Supply of Wood for Pulp and Paper Industry

By

E. O. Siecke,

Director, Texas Forest Service, College
Station, Texas

TEXAS, with a land area of about 168 million acres, has a forested area of about 35 million acres. The major portion of the forested area should be considered as protection forests, with the commercial forest area being confined to the region known as East Texas. Commercial forests within this region cover about 12½ million acres, 80,000 acres of which may still be classed as virgin forests.

The present condition of the East Texas commercial forest area is perhaps best portrayed by the recent survey made by the United States Forest Service. This survey, while it only covered about 6,600,000 forested acres in the southern portion of the East Texas region, gives an indication of what is to be found over the entire region. The average acre shows a stand of 12.64 cords per acre, of which 7.32 cords range in size from six to twelve inches. The information is further broken down to show the pulping and non-pulping volumes now present. In the size class of 6 to 12 inches in diameter, a total of 5.37 cords per acre is given as suitable for pulping, while for 13 inches and over, 3.54 cords per acre are shown. The non-pulping class, ranging from 6 to 12 inches in diameter, carries 1.95 cords per acre, with 1.78 cords per acre for 13 inches and over. It must be remembered that these figures are averages for an area of over 6 million acres.

In the East Texas region, sawmills still play an important part in the industrial life. Of course, we still have some mills which insist on following the old suicidal logging practices, but on the whole there is a marked tendency toward management which will prolong the life of the operation. One of the larger companies was able to qualify as a "Sustained Yield Operator" under the recent Lumber Code.

With continued and more intensive fire protection, and still more improved logging and lumbering practices, the commercial forests of East Texas can undoubtedly be depended upon to continue their importance in our industrial life. In addition the area can support its quota of the pulp and paper industry which is beginning to make its appearance. The Forest Service Survey indicates that today there is available some 30 million

cords of wood suitable for pulping, with a balance of some 70 million cords which can be allocated to other wood-using industries.

Growth in the East Texas timber belt is estimated, from our present information, to be approximately one-half cord per acre. This figure is given as the average under the present existing conditions, but with improvements in these conditions, the growth rate could be doubled. The rainfall in this area averages 50 inches per year, and this coupled with the long growing season, plus a soil well adapted to timber growing will enable the area to supply her reasonable share of the forest products industries.

Forest land ownership within this area, as reported by the U. S. D. A. Census for 1935, credits the farmer with 23%, leaving 77% for the lumber companies, land development concerns, the Federal Government and others. The purchase program of the government is confined to a gross area of about 1½ million acres, of which the ultimate purchases are expected to be about one million acres. There still remain desirable areas of second growth timber lands, available to new forest products, industries, which are sufficient to give some security to their investment.

Steps are being taken toward a program of planned land use. Such a program is expected to result in the reforestation of sub-marginal areas and adding to the future timber wealth of Texas.

Model Home At Texas Fair To Be Built Of Southern Pine

To demonstrate the possibilities of Southern Pine as a structural and finish material, a model home, as the exhibit of the Southern Pine Association, is being built on the grounds of the Texas Centennial Exposition at Dallas.

Designed by Goodwin & Tatum, Dallas architects, this five-room bungalow is being built with the idea that it can be duplicated almost anywhere at a cost of from \$4,500 to \$5,000.

It is being built of grade-marked lumber, and incorporates the Association's 15 cardinal points of correct frame construction and approved methods of termite control.

All interior walls and ceilings are being finished with Southern Pine boards—shiplap, V-jointed, moulded-joint or wood panels. The doors are slab and laminated pine. The prevailing interior decorative note will be the bright, pleasing, natural finish of the wood. The roof will be covered with cypress shingles.

The home will include numerous built-in features and provision for many modern conveniences.

Progress of Grade-Marking

Three Hundred Southern Pine Mills Now
Licensed to Grade-Mark Lumber

THE grade-marking of lumber, a practice instituted under the direction of the Standardization Conference, held in the early 1920's under the auspices of the Department of Commerce, and which was at first hailed with wide acclaim, found many obstacles in its way. Lumber, unlike a synthetic product, has to be classified according to the way it comes from the tree. The grading of lumber is a matter for experts. To make the opinion of these experts as to the grade of lumber positively ascertainable by the ultimate buyer, some means of marking each piece, with an authoritative stamp, had to be devised. Grade-marking, under the direct supervision of each regional lumber manufacturing association, was the method evolved by the Standardization Conference.

It has taken the lumber industry, combined with the help of the Forest Products Division of the Department of Commerce, many years of educational work to establish a proper recognition of grade-marking.

Many architects, engineers and industrialists in the past few years have adopted the practice of specifying that all lumber be grade-marked. The Federal Government has advocated the principle of identifying all lumber by grade-marks, and in recent years all of the major lumber buying divisions of the government have required that each piece of lumber shall bear an official grade-mark.

The recent mandatory provision by the Procurement Division of the Treasury Department in the District of Columbia, in metropolitan New York, and in a number of states, has brought forth the expression of officials that 80% of their lumber problems have been overcome since the requirement that all lumber be grade-marked, has been in effect.

In 1932 there were approximately 100 manufacturers of Southern Pine in a position to grade-mark. The demand for grade-marking has grown until today there are over 300 manufacturers of Southern Pine who are licensed to grade-mark their product.

Proper seasoning is one of the most recent improvements in lumber and this advancement in manufacturing is now provided for in the grades of one lumber manufacturing association. The official grade-mark now also means that the lumber has been seasoned to a point where shrinkage problems, so common in green lumber, are minimized.

FOR WOOD PRESERVATION

GRASSELLI

Chromated

ZINC CHLORIDE

**IT
PREVENTS ROT
REPELS TERMITES
RETARDS FIRE**

Lumber and timber treated with *Grasselli Chromated Zinc Chloride*, the improved salt treating reagent, will render indefinite service against all forms of decay resulting from the propagation of rot-producing fungi and from termite attack. It becomes fire-retardant and, properly treated, leaves the wood in a condition quite difficult to ignite. It does not interfere with the painting, varnishing, staining, or any subsequent finishing. There is no corrosive effect on metal fastenings (hardware, nails, screws, etc.) and woodworking tools.

Commercial pressure-treating plants are located near you for prompt service. Write us for their names — also for our booklet.

THE GRASSELLI CHEMICAL CO., INC.



Founded 1839

CLEVELAND, O.



Branches in principal cities

GOOD ROADS AND MOTOR TRANSPORT

Salt For Road-Building

Soil-Stabilized Low-Cost Highways Built In Many Sections of the Country

SALT-soil-stabilized roads have been constructed in twelve states in this country and by three provinces in Canada, as well as by many counties, townships and cities.

Maryland and Virginia boast such roads, reports C. D. Looker, director of research for the International Salt Company, Inc., of Ithaca, N. Y., which has carried on extensive laboratory tests and cooperated with highway builders in experimental work to develop satisfactory construction methods.

The Maryland salt-stabilized road is near Ocean Beach, while two stretches of such construction in Virginia are on Route 55 between Delaplane and Front Royal, and beginning at Port Royal on Route 17, below Fredericksburg and extending northward to Route 3 between King George and Shiloah.

A typical salt-soil-stabilized road, designed to provide a hard, durable surface which will remain practically free from dust and mud, consists of stone and sand, properly proportioned and bound together by clay that is maintained in cohesive state by the action of common salt.

The construction materials required are gravel (or other aggregate), sand and clay in sufficient quantities to form a compacted wearing surface not less than 3 inches thick.

The soil which binds the material together must be maintained in a damp condition to be an effective binding medium. Common salt, it is declared, in addition to maintaining a satisfactory dampness in the clay, provides qualities of compaction, induces less shrinkage and adds cohesiveness.

The coarser grades of rock salt are considered by the manufacturers to be especially well adapted for use in mixing with stabilized road materials. Because of their size and hardness, it is pointed out, they remain free flowing and may be distributed quite uniformly. Also, it is claimed that rock salt dissolves slowly in soil moisture and maintains a reserve of undissolved salt to replace that lost, the undissolved portion remaining an integral part of the aggregate.

After the surface material is prepared, the rock salt may be spread over the surface and thoroughly mixed with it before compaction or it may be added in

Highway Planning Surveys

Federal Aid Money Available to Finance Such Projects Leads States to Catalog Roads Needs

COMPREHENSIVE highway planning surveys conducted by state highway departments, with the advice and guidance of the United States Bureau of Public Roads, are under way or about to be undertaken in 32 states. It is believed that the completed studies will point the way for the development of long-term highway programs and tax reduction.

These projects will include an inventory of every mile of passable road in each state, a study of the character and extent of traffic on the various roads, and a careful examination of highway costs, expenditures, and revenues. The factors of capital cost, road life, and maintenance cost also will be considered.

To cover the costs of the survey there shall be available in each state 1½% of the following funds, as apportioned to that state: The 1935 Public Works Fund as provided under the Hayden-Cartwright Act; the 1936 fiscal Federal Aid apportionments; and the Works Progress Administration Highway and Grade Crossing apportionments. In addition to these funds the state must match the monies of the Federal Aid funds used. A number of states have already arranged for separate W. P. A. projects, some of which have been approved.

successive layers with the aggregate while building up and compacting the wearing course.

The quantity of rock salt—normally applied is approximately two pounds per square yard of road surface—will vary from 8 tons per mile for a road 14 feet wide to 12 tons per mile for a road 20 feet wide.

Before they are suitable for heavy traffic, salt-soil-stabilized roads need final consolidation through compaction by traffic during what may be called a period of seasoning. Once compacted, it is said, no routine blading or other maintenance is necessary. In the spring, or during and immediately after prolonged wet weather, the surface may soften sufficiently to permit smoothing out irregularities through blading, thus bringing in material from the shoulders to bind loose aggregate.

Analyzes Road Policies

Chief of Bureau of Public Roads Points Out Sharp Increase in Maintenance Expenditures

Special funds now available for repairing flood damage to roads and bridges on the Federal-aid system are estimated to be sufficient to pay half the cost of restoring with modern structures most of the bridges on the system destroyed in the recent extraordinary floods. Thomas H. MacDonald, Chief of the Bureau of Public Roads, made this estimate at a recent transportation conference at the U. S. Chamber of Commerce. These special funds amount to more than \$7,000,000 of the \$10,000,000 authorized by the Hayden-Cartwright Act of 1934. Federal participation is limited to half the cost.

Mr. MacDonald said:

"When such floods occur, almost without exception it is the old-time structures that are seriously damaged or totally destroyed. This does not mean that the loss of the facility to the community is not serious or the replacement costly, but that modern design is producing bridges that do withstand extraordinary floods. This is true, in a broad way, of modern high-type road construction."

The chief of the Federal roads bureau said that the flood damage, although spectacular, caused much less loss than did the deterioration of many miles of pavement over wide areas caused by the severe winter.

In discussing this damage and policies in highway administration Mr. MacDonald said:

"There is, and has been, a tremendous pressure upon public officials for surfacing for motor vehicles, a larger and larger mileage of our public highways. This pressure has resulted in a large relative and actual increase in the mileage of the so-called low-type roadways. This statement is not intended to be critical, except to the extent that the design and cost of these low-cost roads have been forced below reasonably economical standards. The danger in this policy lies in the certain rapid increase of maintenance costs and the exclusion of necessary new construction.

"The policy here expressed of extending the mileage of new construction has been brought about by transferring large mileages, in some cases the total public road mileage within the State, to the jurisdiction of the State, without an equivalent transfer of funds.

"Both of these policies, placing an enlarged commitment against the State highway funds, have been simultaneous with a diversion to other than highway purposes of income from the special taxes on road users.

"All of these policies are tending to destroy the logical and necessary stage construction policy which was adopted by practically all of the States, by utilizing funds which should go to replace and to bring to more adequate standards the roads which have received the first stage improvement."

YOUR *Best Buy* IS AN ALLIS-CHALMERS MODEL "M"



Powerful Front End Loader—Economical power for loading dirt or materials, handling garbage, snow removal, etc. Many cities use the Model "M" Tractor and front end loader for such work.



Saddle Bags for Sewerage

These "saddle bags," built especially for The Allis-Chalmers Model "M", are used by the City of Springfield, Ill., to haul fertilizer produced by the sewerage system. Four speeds forward give the "M" a big advantage on hauling jobs.

Speed for Sprinkling

In Chicago, this Allis-Chalmers Model "IU" Tractor sprinkles the track between heats. Where speed is an advantage, no other tractor can compare with the air-tired "IU" with its 15-25 mile an hour fourth gear.

The Model "M" is unquestionably the greatest value in its class to-day. More horsepower for your money . . . more speeds . . . better balance. Economical to operate—burns gasoline or low grade fuels. Compare the "M" against the field—and BUY QUALITY.

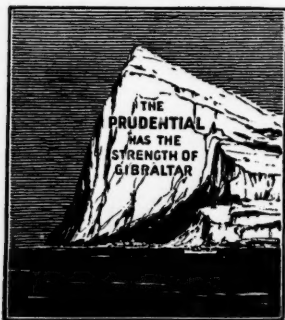
*Only Tractor
in its class with . .*

- 27 + DRAWBAR H. P.
- 4 SPEEDS FORWARD
- REMOVABLE
CYLINDER SLEEVES
- GASOLINE-KEROSENE
DISTILLATE

ALLIS-CHALMERS

TRACTOR DIVISION—MILWAUKEE, U. S. A.

When an Estate passes to the Heirs



If you expect to leave or inherit
estate proceeds, you should
study the tax problems involved.

YOU MAY HAVE OUR BOOKLET
ON THIS SUBJECT

THE PRUDENTIAL
INSURANCE COMPANY OF AMERICA
EDWARD D. DUFFIELD, President
HOME OFFICE, NEWARK, N. J.

FINANCIAL NEWS

Cooperation Toward Recovery

Secretary of Commerce Roper, in an address to the U. S. Chamber of Commerce, presented a program of ten points as suggestions to industry whereby practical cooperation may be given toward recovery. They are all well enough in their way and probably none of them are foreign to what industry wants and would like to carry out. But the Secretary does not complete the picture as to what will give industry the confidence it needs to proceed in expansion work. Heavy goods industries lag because they fear the government.

Secretary Roper is a business man. Can his influence not be made effective in stopping extravagant spending, and in the attainment of an attitude by the Administration toward industry which, to say the least, is not conducive to a cooperative program?

Cotton Price Policy Blamed

Cotton authorities appearing before the Senate Cotton Probe Committee, criticize the cotton control policies of the government. Senator Smith also expressed the opinion that the administration's monetary policies gave to Great Britain and other nations a decided advantage over the United States. He is quoted as saying that this advantage was carried out in currency manipulation, due to our devaluation of the dollar and the fact that foreign countries had gold they could sell here at almost twice the former price. This was coincidental with a break in the price of silver from 89 cents to 40 cents per ounce, which thereby enabled England to take two American dollars and buy \$4 in silver rupees.

Steel Profits

The U. S. Steel Corporation reported at the end of last month that income for the first quarter was the best of any first quarter since 1931. Earnings were 94 cents a share on 3,603,811 shares of cumulative preferred stock.

Taxing Surpluses

Industry regards the new tax bill as a levy upon savings, which will render ineffective the ability to keep plants open and continue employment when another crisis comes. In this connection it should be remembered, that to keep men on the payroll while the books were showing red ink balances, American business, accused in Congress by inconsiderate politicians of disregarding the welfare of working men, spent twice as much and more of its own money than the stupendous sums which the government handed out. By crippling industrial resources a serious step will have been taken that will bring distress when a low point of the economic cycle comes again. It will tend to fasten unemployment immovably upon the country.

If Surpluses, Why Not Savings?

The Arkansas *Gazette*, referring to the new tax bill designed to make corporations distribute a larger part of their earnings to stockholders, asks:

"Should Arkansas, in order to boost tax revenue, undertake to make the people spend more and save less by taxing their savings accounts from 25 to 40 per cent? Would such a policy put the people of Arkansas in better shape to meet individual or family financial emergencies, or to weather a spell of general hard times?"

(Continued on Page 56)

THE BALTIMORE AND OHIO RAILROAD CO.

SUMMARY OF ANNUAL REPORT FOR YEAR 1935

THE Annual Report of the President and Directors for the year 1935 is being mailed to Stockholders of record. Operating results and other matters of interest are summarized as follows:

CONDENSED INCOME ACCOUNT

	Year 1935	Increase Over 1934
Operating Revenues	\$141,873,643.25	\$6,334,247.97
Operating Expenses	105,461,140.17	6,126,356.05
Net Operating Revenue	\$ 36,409,503.08	\$ 207,891.92
Taxes, Equipment and Joint Facility Rents, etc.	12,110,546.24	D 413,125.46
Net Railway Operating Income	\$ 24,298,956.84	\$ 621,017.38
Other Income less Miscellaneous Charges	5,141,402.87	303,790.71
Income Available for Fixed Charges	\$ 29,440,359.71	\$ 924,808.09
Fixed Interest and Other Charges	32,621,268.35	279,964.70
Net Income or Deficit	\$ 3,180,908.64	\$ 644,843.39
Depreciation Charged to Opera- tion	7,110,662.85	D 473,096.58
Net Income Before Depre- ciation	\$ 3,929,754.21	\$ 171,746.81

D—Denotes Decrease.

CONDENSED BALANCE SHEET ASSETS

Investment in Road and Equipment	\$ 979,821,839.36
Investment in Subsidiary and Affiliated Com- panies Separately Operated	88,638,519.41
All Other Investments	108,151,560.27
Total Investments	\$1,176,611,919.04
Current Assets	27,418,253.99
Cash and Special Deposits	8,687,424.91
Material and Supplies	7,605,613.60
All Other	11,125,215.48
Deferred Assets and Unadjusted Debits	3,520,334.21
Total	\$1,207,550,507.24

LIABILITIES

Capital Stock	\$ 315,158,509.87
Preferred Stock	\$ 58,863,161.95
Common Stock	256,295,347.92
Unmatured Interest Bearing Obligations	687,694,114.77
Bonds and Other Obligations Issued or Assumed	\$636,034,714.77
Unassumed Obligations of Operated Subsidiaries ...	41,209,000.00
Capitalized Leaseholds	10,450,400.00
Current Liabilities	23,110,893.58
Audited Accounts and Wages Payable	7,926,610.59
Accrued Interest Charges ...	8,906,851.80
All Other	6,277,431.19
Deferred Liabilities and Unadjusted Credits	105,255,729.15
Accrued Depreciation—Equip- ment	\$ 89,215,894.17
Inter-Company Non-negoti- able Accounts	9,819,468.25
All Other	6,220,366.73
Corporate Surplus	76,331,259.87
Total	\$1,207,550,507.24

REVIEW OF OPERATIONS

Operating revenues increased \$6,334,247.97, or 4.67% over 1934. Freight revenue increased \$6,489,163.64, or 5.58%, while revenue tons increased 2.46%. The relatively larger increase in freight revenue is due to emergency increase in rates granted by the Interstate Commerce Commission, effective April 18, 1935. Passenger revenue declined \$259,978.18, or 2.56%, due, in part, to decrease of 1.33% in passengers carried one mile. Other revenues including mail and express increased \$105,062.51, or 1.16%.

Operating expenses increased \$6,126,356.05, or 6.17%, over 1934. Total maintenance expenses increased \$2,758,483.96, or 6.93%, of which \$298,364.62 was in maintenance of way and structures, and \$2,460,119.34 in maintenance of equipment. The maintenance of equipment expenses include depreciation charges of \$7,110,662.85, a decrease of \$473,096.58 compared with 1934. Transportation expenses increased \$2,854,826.25, or 6.02%.

INCREASED EXPENSES

In addition to the expense of handling increased traffic, the restoration of rates of pay which were in effect prior to February 1, 1932, added approximately \$4,515,000 to operating expenses during 1935 over 1934. Effective February 1, 1932, a deduction of 10% was made in basic rates of pay; of this 2½% was restored July 1, 1934; 2½% on January 1, 1935, and the balance, or 5%, on April 1, 1935.

TAXES

For the year 1935 the company paid in taxes, Federal and State, an aggregate of \$7,519,323.17. This represents 19.52% of the income before taxes (\$38,512,134.49) and is equivalent to \$2.39 on each share of capital stock outstanding.

NET INCOME

Net operating revenues increased \$207,891.92, while taxes, equipment and joint facility rents, etc., decreased \$413,125.46, resulting in an increase in Net Railway Operating Income of \$621,017.38. Other income, including rents, dividends and interest, after deducting miscellaneous charges, reflect an increase over 1934 of \$303,790.71. Income of \$29,-

440,359.71 was available for interest and other fixed charges amounting to \$32,621,268.35, resulting in a Net Deficit of \$3,180,908.64. The Net Income before depreciation was \$3,929,754.21.

CHANGES IN CAPITAL ACCOUNT

There was a net decrease in the total investments of the Company of \$3,388,968.54, the major portion, or \$1,806,543.34, being for retirement of road and equipment, and the remainder represented by adjustments with subsidiary companies entailing no diminution in asset value, and by some miscellaneous items of relatively minor importance. There was a net decrease in unmaturing obligations of \$3,359,119.50, due chiefly to the retirement of equipment trust notes.

FEDERAL LEGISLATION

The United States Supreme Court on May 6, 1935, decided that the Railroad Retirement Act of 1934 was unconstitutional; however, another act substantially similar in its purpose, known as the Railroad Retirement Act of 1935, was approved August 29, 1935, and on the same day another act was approved, to levy an income tax on all employees of 3½% on monthly compensation not in excess of \$300.00, and an Excise Tax on carriers of 3½% of the compensation not in excess of \$300.00 per month paid employees. The railroads have united in proceedings to test the constitutionality of this legislation.

The Social Security Act, approved August 14, 1935, imposes an additional excise tax on the carriers covering unemployment compensation. The tax for 1936 will be 1% of total wages paid; 2% in 1937, and thereafter at the rate of 3%. The constitutionality of this act has not yet been passed upon.

SHAREHOLDERS

At the close of 1935 there were 42,389 registered holders of the Company's capital stock of both classes, with an average holding of 74 shares. The continued cooperation of shareholders in the use of the Company's facilities and the solicitation of the business of others for transportation over its lines is earnestly desired and greatly appreciated.

The President and Board of Directors record their appreciation of the loyal support and efficient cooperation of the officers and employees in the conduct of the Company's business and affairs throughout the year.

DANIEL WILLARD, President.



SOLVAY
TRADE MARK REG. U. S. PAT. OFF.

SODA ASH (58%)
Light—Fluf (Extra Light)—Dustless Dense
 Graded to meet the exacting needs of many industries. Produced to standards which assure unvarying uniformity in strength and purity.

CAUSTIC SODA (76%)
Solid—Ground—Flake—Powdered—Liquid
 Meets every quality demand. Dependable. Uniform. Full strength. Pure. Accepted everywhere as standard.

TEXTILE SODA
for Finishing
 Used extensively with marked success when a product milder than Soda Ash is desired. Especially favored for wool scouring and finishing—and cotton cloth finishing.

Liquid Chlorine
Sodium Nitrite
Potassium Carbonate
 (Liquid 47%—Granular—Hydrated 83-85%
 —Dustless Calcined 98-100%)

Fast, sure, on-time deliveries from 100 stock points. Write today for full particulars.

SOLVAY SALES CORPORATION
*Alkalies and Chemical Products Manufactured by
 The Solvay Process Company*

40 Rector Street New York
BRANCH SALES OFFICES
 Boston Charlotte Chicago Cincinnati
 Cleveland Detroit Houston
 Indianapolis Kansas City Philadelphia
 Pittsburgh St. Louis Syracuse
 New York

Financial News

(Continued from page 54)

Substitute for Wagner Housing Bill

The Wagner bill continues a bone of contention. The Committee on Economic Recovery has offered a substitute plan to provide homes for those with low incomes. It is in line with that which the Committee presented to the President two or three months ago, intended to stimulate the erection of hundreds of thousands of homes annually by private industry. It agrees with the purpose of the Wagner bill, but differs as to procedure.

The Committee wants the Federal, state and local government to share in the cost of any subsidy that may be granted, and it objects to the authority given the Federal Housing Authority which the Wagner bill creates.

The further we go into the question of government beneficence, government oversight and government handling of affairs, always left in the past to private enterprise, the more the distance we have traveled from former practices becomes apparent.

The Construction Industry

Students of business agree that nothing would be more helpful to the general situation than continued increases in the amount of new construction. The construction industry has been at low ebb and the advances made in the last few months are the first signs of encouragement for several years. While far from normal at the present time, it is noticeably better, but still about 50 per cent below what it should be. Estimates vary, but it is probably conservative to say that not less than 2,000,000 new residences are necessary at the present time. Wages that have been out of line with depression conditions have retarded building.

Government Lending Agencies

The Tampa *Tribune*, under the heading "State Capitalism" refers to the amount of loans made by government agencies through various Federal corporations and credit bureaus as totaling \$8,300,000,000.

Starting with the War Finance Corporation of the Wilson administration, which was given a revolving fund of \$500,000,000, to be lent to private business, the conduct of which was thought necessary to the successful prosecution of the war. The Corporation was successful, incidentally, with a return of about 6 per cent on the money it advanced. The article lists the following lending agencies established since:

- Reconstruction Finance Corporation
- Commodity Credit Corporation
- Export-Import Banks
- Shipping Board
- Production Credit Corporation
- Regional Agricultural Credit Corporation
- Home Owners Loan Corporation
- Federal Housing Administration
- Federal Land Banks

Consumer Loans by Commercial Banks

A notable article in this issue by E. S. Woosley, vice president, First National Bank of Louisville, Ky., calls attention to a field in which commercial bankers might find profitable returns, i. e., a field now occupied by consumer credit organizations and principally utilized in financing new automobiles and used cars. Changes which have come about in American banking in the past few years are causing an intensive study to be made by bankers throughout the country as to possibilities for profitable and safe expansion of their business. Both from the standpoint of safety and the volume being done by other agencies, loans on consumer goods are receiving much thought. Government lending agencies also have preempted to a considerable degree territory heretofore filled by commercial banks.

MANUFACTURERS RECORD FOR

ON OUR SYSTEM

TWO, THREE MINUTE EGGS

In a quart pan, steaming at atmospheric pressure

TWO, THREE THOUSAND HORSEPOWER BOILERS

Steaming at four hundred sixty-five pounds pressure

Different tasks, different equipment, different pressures

BUT, THE ONE FUEL—NATURAL GAS

Whatever your heat requirements

CONSULT YOUR LOCAL GAS COMPANY

or write us

SOUTHERN NATURAL GAS COMPANY

Watts Building

Birmingham, Ala.

An Aid To Commerce

A proper banking function is to facilitate in every reasonable way the movements of commerce.

As we view it, the problem of recovery is still mainly up to industry and the unfilled demand of America presents an opportunity to producers.

Our facilities and cooperation are at the service of our customers.

We invite correspondence.

Baltimore Commercial Bank

GWYNN CROWTHER, President

Baltimore, Maryland

Member Federal Reserve System

Member Federal Deposit Insurance Corporation



While cosmopolitan in its general appeal, and modern up to this moment in its equipment, there is a peculiar flavor of The Old South here which Southerners are quick to note and appreciate. They feel at home and come back to us again and again.

Rates \$3.00 per day and up. Every room with bath or shower. Centrally located.

The Southern Hotel
BALTIMORE



Imagine

**Wearing a
Pair of Shoes**

which DO NOT MATCH!

This is an extreme example, but not any more than many instances of unmatched packaging found everywhere! Perhaps yours may come in that category whereby your label, seal or band, box, counter display, shipping carton, etc. have different color combinations and designs without any unity whatever. The eye is confused by a conglomeration of colors and patterns and doesn't get a proper lasting impression. To impress quality or class, consider our

Co-ordinated Packaging

Let us make a study of your product and suggest unified or matched packaging so that your name, trade mark, slogan and brand will be properly presented and impressed upon the mind of prospective purchasers. Good impressions lead to sales!! Oddly, our "CO-ORDINATED PACKAGING" frequently makes it possible to utilize the same art work and plates, thus effecting economy in production costs.

May a representative confer?

OLD DOMINION BOX CO., Inc.

LYNCHBURG, VA.

Winston-Salem, N. C.
Pulaski, Va.

Burlington, N. C.

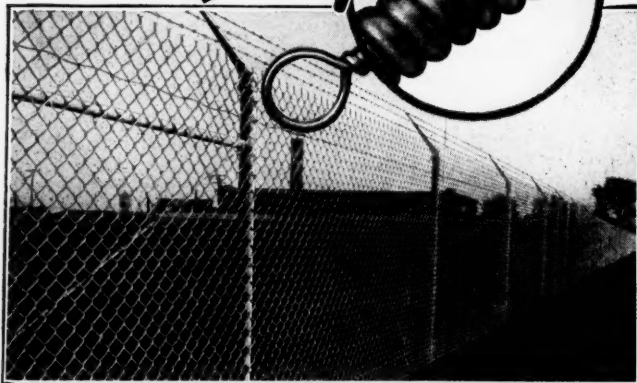
Asheboro, N. C.
Charlotte, N. C.

Old Dominion Paper Boxes

AT LAST!

CHAIN LINK FENCE THAT CAN

Stand the Wrap



No weak spots for corrosion to attack—the BETHANIZED wire can be wrapped around its own diameter without breaking or flaking its corrosion-defying zinc coat.

HERE are the quick facts. Bethanized wire has a coating of chemically pure zinc—free from any vulnerable iron content. The coating is smooth and uniform—not hard and brittle. Twist the wire, bend it double, wrap it around itself—you just can't break the zinc coating and expose the steel core.

Think what that means. An Anchor Fence of Bethanized wire is a fence with no flaws in its pure zinc armor—no cracks or crevices through which corrosion can creep in. Because Bethanized wire can "stand the wrap," these Anchor Fences stand up for many extra years of service—even in industrial atmospheres that are heavy with soot, salt, sulphur and other corroding agents. And now there's no "premium"—no extra cost—for Bethanized wire.

Anchor Fence of Bethanized wire—in types to suit every industrial requirement—are immediately available to you through sales and erecting offices located in every important industrial center in the South. Learn why the new Anchor Fences of BETHANIZED wire will outlast by many years any other chain link fence you can buy. Mail the coupon—and bring yourself up to date on chain link fence.

ANCHOR Fences

OF BETHANIZED WIRE

TODAY PLEASE

ANCHOR POST FENCE COMPANY
6622 Eastern Avenue, Baltimore, Maryland

36

I will appreciate a copy of your free specification manual giving full details concerning ANCHOR FENCES OF BETHANIZED WIRE for Industrial Property.

NAME

ADDRESS

AND SO IT GOES

QUEEN MARY—When the great flag-ship of Britannia's merchant marine, the Queen Mary, leaves for New York late this month, with 2200 passengers and 1100 crew aboard, she will be equipped to serve 10,000 full meals per day. It will take 100 cooks, 15 butchers and a small army of kitchen hands to prepare the victuals.

Her larder will include: 20 tons of fish, 20 tons of meat, 70,000 eggs, 4,000 pounds of tea and coffee, 10,000 pounds of sugar, 30 tons of potatoes, 4,000 gallons of milk, 40,000 pounds of mixed vegetables, and three tons of butter. In addition there will be thousands of bottles of wine, beer and liquor.

The immense contracts for china, glassware and linen are among the largest ever placed in Great Britain. Linen valued at \$225,000 will be on board, including everything from pillow slips to waiters' cloths. China and glassware total 134,000 pieces.

PAWS PAUSE PWA—Just as too many cooks spoil the broth, too many canines in Tappahannock, Virginia, spoiled the concrete.

As fast as new sidewalks were poured, packs of strolling beagles and general all-round hounds came to call, leaving so many paw prints in the wet surfaces, that city fathers abandoned the project.

Tappahannock's claim to distinction is the boast that it has more dogs per capita than any other town in Virginia. One family has nine.

THE BIG RACKET—For quite some time we have held the misguided opinion that sound—any sound from a peep to a bugle call—travels 1,086 feet a second. We thought we remembered that figure from Physics 12-B.

The flagrancy of our error is emphasized by reports recently issuing from that remote center of technical ex-actitude, the Michigan College of Mining and Technology. They say, "That depends." A big sound goes faster than a little sound, and a big sound goes faster at first simply because it is a big sound. After a while it slows down.

They exploded a pound of dynamite and found its "noise" was making 1,505 feet when it passed a point fifteen feet away. Maybe in the future sounds will be classified as speeds.

It may become a penal offense to cause atoms to chase along faster than, say, 1200 feet per second.

SUEY PLANT—Florida is the sort of state where anything can happen, and where many unique things actually do happen.

The latest unusuality to reach our eyes is the establishment of a Chinese chop suey canning and shipping plant located at Clermont. According to its founder, Dr. Takahashi, the third syllable of whose name coincidentally suggests the nature of his product, some 1200 gallons of the suey have already been shipped. This is effected in one and one-half gallon thermos jugs, to insure the freshness of the delicacy.

Trade has reached State-wide proportions since early last Fall, all as a result of the founder's dream: a dream to put hot, fresh chop suey in the mouths of Florida's elite.

MYSTERY FISH NO MYSTERY FISH—When President Roosevelt landed at Nassau during his recent fishing trip, he told reporters he had captured a "twenty-seven pound mystery fish."

Having had it placed on ice, he indicated his intention of taking the fish back to the Smithsonian Institute experts in Washington for identification.

Some wisecrack in Detroit was prompted to analyze it for him, saying: "It's a New Deal flounder."

CHEMICALS FROM THE WATER HYACINTH—Growing so profusely in many parts of the world as to constitute a nuisance in canals and navigable waterways, the water hyacinth has been found to contain a number of reclaimable chemical elements.

Perhaps the water hyacinth abounding in the Gulf Coast section may offer possibilities for further diversification of the South's great chemical industry.

OUR MONTHLY STATISTICAL ABSTRACT—Twelve per cent of the world's people live in 626 cities larger than 100,000. (Knoxville, Tennessee, has a population of about 100,000.)

America, of course, is different. Where one out of every eight of the world population, including these United States, lives in cities larger than Knoxville, one in four Americans live within congested areas of large cities.

In the U. S. there are 93 cities as large as Knoxville, or larger. They are located in 36 of the 48 states. In these 93 cities, 36 million of the 1930 population lived. What they have done with themselves since 1930 we cannot vouchsafe.

But that our ratio of city cave-dwellers exceeds that of the world, 1-4 as against 1-8, is incontestable.

GIVE THIS TO JUNIOR—A ship is twice as old as its boiler was when the ship was as old as the boiler is. The present combined ages total 36 years. How old are each?

DIAL IT—If you were sitting in the salon of a modern Atlantic liner, you might be startled to hear yourself paged for a phone call.

Experts of the Bell Telephone Company, it seems, have devised a ship-to-shore radio-telephone service which singles out your ship from all the others on the high seas, rings a bell similar to yours in the hall at home. Each ship has its own three-digit telephone number. When the landbound switchboard operator places a call, she merely dials the ship's own number.

Formerly, the ship radio operators had to stand by day and night, headphones to ears, or loudspeakers set to blat them in the face if a call came through.

Now we look forward to many an interesting chat with our sea-bound friends, and hope that one of them will some day make enough money to go abroad, so we can hear from him in this way.

ARE YOU AWARE THAT—

fibrous glass, now manufactured in the United States, came as a result of eleven years of intensive research?

underground pipes, when coated with asphalt, two separate layers of a cellulose acetate transparent film, followed by more asphalt and finally paper, turn tree roots harmlessly aside?

the standing joke about Luther Burbank's grafting rubber shoots to the banana tree to produce non-skid peels has come to life? A non-skid floor wax has just been patented, the inventor claiming an addition of 10% of raw rubber to the floor wax produces a surface less than half as slippery as conventional waxes.

boys who salvage scrap metals for a few cents a pound are part of a billion dollar industry which operates through thousands of dealers for the collection and re-sluing of worn-out metal products?

industrial consumption of tung oil chiefly in paint manufacture has increased 70% in four years, bringing the 1935 total up to 127,500,000 pounds, of which by far the major part was imported from China?

BULL INTO UNICORN—By operating upon the horn buds of a bull-calf, transplanting them together so that only a single horn would grow, Dr. W. Franklin Dove, of the University of Maine, recently produced a unicorn, we read.

Strangely enough, its horn was not only single, it was twisted, after the description of the unicorn of legendary fame. The bull, 'tis said, found the lone, strong horn, so great an advantage in fighting that in short order it developed "much of the proud yet unaggressive bearing and disposition ascribed to the unicorn of fable."

However, Dr. Dove has not quite managed to make over the bull to conform strictly to all features in that the ancient unicorn had "head and body of a horse, the hind legs of an antelope, the tail of a lion . . . sometimes the beard of a goat."

DID YOU DISCOVER IT?—Last month there was something new in the MANUFACTURERS RECORD. We wonder if you saw it? One reader was at pains to know what we meant by printing an item with such imbecilic implications as, "How Fast Is A Fish?"

It is our purpose in the space permitted here, to present you with a few kernels, together with an occasional unshelled nut to crack. Perhaps you will have some cerebral twisters, and if you do, send them along.

MAY NINETEEN THIRTY-SIX

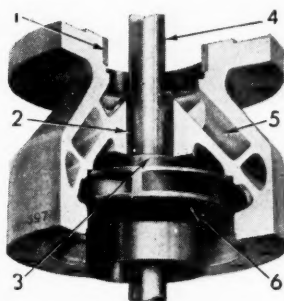
COOL WATER AT LOWER COST

A single stage
shows why...

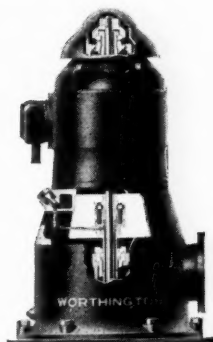
WORTHINGTON

**DEEPWELL
TURBINE
PUMPS**

will
deliver



1. Impeller renewable wearing ring...closer running clearance without seizing...reducing water by-pass and maintaining original pump efficiency for longer period. Renewal of a worn ring restores original efficiency.
2. Renewable bushing... hard bronze...guides shaft and maintains close running clearance... prevents recirculation losses.
3. Impeller lock... locks impeller to shaft...cannot work loose, but easy to remove.
4. Impeller shaft...high grade stainless steel... accurately ground entire length...ample size to prevent shaft whip.
5. Bowl...close-grained cast iron...return passages correct hydraulic design with resulting higher initial efficiency and less wear.
6. Impeller... hard bronze, carefully balanced for smooth operation.



**MORE
WATER
at
LOWER
COST
for
a
LONGER
TIME**

• Send for Bulletins

WORTHINGTON PUMP AND MACHINERY CORPORATION
General Offices: HARRISON, NEW JERSEY

A-36173 Branch Offices in Principal Cities throughout the World

WORTHINGTON



Japanese Competition Affects 'Kerchief Industry Adversely

Asheboro, N. C.

Editor, Manufacturers Record:

The fact that the handkerchief industry of this country has been suffering for quite a long time from the importation of Japanese handkerchief cloth, prompts me to write you.

We accepted the principles of the NRA and adopted the plan of maximum hours and minimum wages and have continued to operate in the same way up to the present time.

I am a firm believer in manufacturing plants operating eight hours a day and paying a fair wage, and we have never violated this in any way.

I have faith in the American people and believe in buying the cloth we use in our plant from mills located in the United States. I have never bought a yard of Japanese cloth, although very much cheaper than American cloth, and I am not going to buy it. I take the position our citizens are due the opportunity to obtain wages which result from the manufacture of goods we purchase.

Enormous quantities of Japanese handkerchiefs are dumped in this country each month and millions of yards of Japanese cotton bleached cloth. This has a direct effect on the payrolls of cotton mills and finishing plants.

Japanese competition in cheap men's handkerchiefs made from print cloths is such that it is impossible for us to make the merchandise in this country as cheaply as the Japanese furnish the finished handkerchiefs. How can we maintain our plants, furnish employment, pay taxes, etc., when we are faced with such competition? Their wage scale is so low (about 1/7 or 1/8 of our labor cost) that it is impossible to meet the situation. If we are to help maintain a stand-

ard in this country among manufacturers by holding to hours and wages, why should we not have protection from competition such as this?

The Japanese have taken tremendous quantities of handkerchiefs out of the market during the last several months and established a price in many instances below our cost of production. The following figures tell their own story:

Japanese Handkerchiefs Imported Into the United States

1932	6,144 dozen
1933	61,098 "
1934	751,597 "
1935	2,733,817 "

This will prove to you that the handkerchief industry is facing a desperate situation.

Bleached Cotton Cloth Imported From Japan

1932	51,397 yards
1933	256,624 "
1934	6,043,345 "
1935	30,041,422 "

In the one month of January, 1936, 505,518 dozen Japanese handkerchiefs were imported into the United States. This will mean, if the rate is maintained, more than 6,000,000 dozen Japanese handkerchiefs will come into this country this year.

So great is the rate of increase, that in cotton bleached goods the month of January, 1936, shows total importations from Japan of 5,842,933 square yards, or at a rate of over 70,000,000 square yards per year.

I am fighting to save my business from such unfair and destructive competition, and I feel it is in the interest of our employees and every manufacturer and citizen of the United States.

S. B. Stedman, President,
Stedman Manufacturing Co.

Memphis Street Railway Has Expended \$405,000

Memphis, Tenn.—Since the reorganization of the Memphis Street Railway Company was effected in February 1935, \$405,000 has been expended for new electric coaches and motor buses, Col. Roane Waring, president of the firm, announces.

The company proposes to continue its betterment program by purchasing additional rolling stock, says Col. Waring.

By the Insurance Department CONDENSED STATEMENT SHOWING THE CONDITION OF THE Fidelity & Guaranty Fire Corp. Baltimore, Md.

DECEMBER 31, 1935

Total income during the year	\$3,602,906.36
Total disbursements during the year	3,068,383.68
Total admitted assets	5,853,996.83

Total liabilities except capital	3,218,537.39
Capital actually paid up in cash	\$1,000,000.00
Surplus over all liabilities	1,635,459.44

Surplus as to policy holders..	2,635,459.44
--------------------------------	--------------

Total Liabilities	\$5,853,996.83
Net premiums in United States December 31, 1935.	\$5,153,009.58
Risks written in Maryland during 1935	140,888,804.00
Premiums on Maryland business in 1935	189,135.63
Losses paid in Maryland in 1935	58,717.61
Losses incurred in Maryland in 1935.	74,279.61

STATE OF MARYLAND

Office of the

STATE INSURANCE DEPARTMENT

Baltimore, Md., March 2, 1936

I hereby Certify, That the above is a true abstract, taken from the Annual Statement of the FIDELITY AND GUARANTY FIRE CORPORATION, BALTIMORE, MD., for the year ending December 31, 1935, now on file in this Department.

W. S. HANNA,
Insurance Commissioner.

1836-1936
One Hundredth Anniversary
The American Bank Reporter
Published March, July, November

Contents
A complete list of banks, bankers, savings banks and trust companies in the United States, Canada and principal cities of foreign countries, with names of officers, capital, surplus and undivided profits, loans, deposits, principal correspondents, attorney list, etc.

NEW COMPLETE EDITION
DELIVERED \$10.00

SPECIAL STATE EDITIONS or
COMBINATION OF STATES
Moderately priced
ORDER YOUR COPY TODAY

American Bank Reporter
420 EAST 49th STREET
NEW YORK, N. Y.

AAA BIRMINGHAM
ALABAMA

250 OUTSIDE ROOMS
250 BATHS with SHOWERS
RADIO IN EVERY ROOM
CIRCULATING ICE WATER
IN EVERY ROOM
AIR CONDITIONED
COFFEE SHOP

FRANK (PETE) WOODS, Manager
A. P. REICH, Managing Director

BIRMINGHAM'S MOST MODERN HOTEL
HOTEL REDMONT

\$10,000,000 Show Window

Petroleum Industry to Stage Exhibition
Covering 15 Acres at Tulsa

Tulsa, Okla.—Plans for the opening of the Petroleum Exposition, the nation's largest industrial show here, May 16 to 23, are fast materializing with more than 500 exhibitors from 26 states shipping in equipment for display, according to W. G. Skelly, president of the Skelly Oil Company and president of the exposition.

Exhibits will cover 15 acres of space and be valued at more than \$10,000,000. Skelly estimates that more than 10,000 changes, improvements, and new inventions in the oil industry will be on exhibit.

Special features of the exposition will include a demonstration of how a burning oil and gas well fire is put out with nitroglycerine taken within two feet of the 500 degree fahrenheit flame by experts. There are only a half dozen such experts in the country.

Another spectacular event will be a demonstration of how man-made earthquakes, recorded by the seismograph, are used to find pools of petroleum. Actual explosions, simulating quakes, are used to help record the kind of earth sub-strata.

\$1,600,000 Coal Pier Completed

(Continued from Page 39)

dent of its own power. Two heavy duty electric boat haulage machines, equipped with 65 horse-power electric motors, one on each side of the dumper, move a vessel back and forth during the loading operation. The ship movement is controlled by the cradle operator, since he is stationed high on the dumper and is able at all times to view conditions on the ship. Mooring lines, to hold the ship closely against the pier, are also provided and these are handled by four electric capstans, having an aggregate of 80-horsepower.

The new pier is equipped to load at night, ten floodlights with 1000-watt lamps being placed at strategic points on the structure.

Construction of the pier was started in October, 1934. An idea of the size of the job may be gained by considering the following list of principal materials used:

5,500,000 pounds of structural steel
500,000 pounds of reinforcing steel
600,000 board feet of lumber
4,000 pieces of piling
3,350 feet of rail
15,000 cubic yards of concrete
500,000 cubic yards of dredging

The project was carried forward un-

der the direction of W. P. Wiltsee, chief engineer. A. B. Stone, bridge engineer, designed the pier. J. Y. Neal, resident engineer, supervised construction at the pier site.

Firms that handled construction operations and supplied materials and equipment, included:—

Pier and Dumper Foundation—Empire construction Co., Baltimore

Foundations For The Barney Haul and Land Viaduct—J. P. Pettyjohn & Co., Lynchburg, Va.

Structural Steel Viaduct—Virginia Bridge Co., Roanoke, Va.

Car Dumper—Heyl & Patterson, Inc., Pittsburgh, Pa.

Electric Pusher—General Electric Co., Schenectady, N. Y.

Electrical Equipment—Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.

Car Retarders—General Railway Signal Co., Rochester, N. Y.

Dredging—The Arundel Corporation, Baltimore

Pile Work—C. B. Cross Co., Norfolk, Va.

Excavation—The George T. McLean Co., Portsmouth, Va.

Reinforcing Steel—Truscon Steel Co., Youngstown, Ohio.

Main Shipping Building Sears Roebuck & Co.

Atlanta, Ga.—272 squares of Genasco applied by C. P. Cofer Roofing Co., December 1935—the largest reroofing job in Atlanta in 1935.



SOLD

.....to **Sears, Roebuck & Co.**

"Save, at Sears" is a buy-word in millions of American homes. And at Sears they practice what they preach. They wanted protection for their valuable merchandise . . . they wanted good appearance with

years and years of roofing security. And so the roofing selected was a Genasco Standard Trinidad Built-up Roof—the largest reroofing job in Atlanta in 1935. Mail the coupon below, *now*.



Genasco
Reg. U. S. Pat. Off.

**STANDARD TRINIDAD
Built-up Roofing**

Roof security is felt with Trinidad

THE BARBER ASPHALT COMPANY

MR5

1600 Arch Street
Philadelphia, Pa.

Please send me a copy of your illustrated book "For Your Roof" showing many prominent buildings protected with Genasco Standard Trinidad Built-up Roofing.

Name

Address



TRADE LITERATURE

DRUM CONTROLLERS—

Catalog—No. 36, illustrating and describing Furnas Drum Controllers, which have been designed for compactness and the utmost in reliability and durability.

Furnas Electric Company, West Allis, Wis.

CONVEYOR-ELEVATOR—

Catalog—illustrating and describing the unique REDLER Conveyor-Elevator for handling coal, chemicals and similar bulk materials.

Stephens-Adamson Mfg. Co., Aurora, Ill.

PORTABLE CABLE—

Bulletin—GEA-1018A, presenting data and listings of all types of tellurium all-rubber, Glyptal compound, and braided types of portable cable for mining, welding and transit equipment, electric shovels, and draglines, etc.

General Electric Co., Schenectady, N. Y.

ROCK ASPHALT SURFACES—

Booklet—presenting plans and specifications for Kentucky rock asphalt surfaced tennis courts, playgrounds, sidewalks and driveways, and combination playgrounds with tennis courts, volley ball and basket ball courts.

Kentucky Rock Asphalt Institute, Louisville, Ky.

GEARS, ETC.—

Catalog—128 pages, devoted to the complete line of spur, bevel, worm and other gears, and also motorized speed reducers, etc., with technical data.

The Ohio Gear Co., Cleveland, Ohio.

TIRE COMBINATIONS CALCULATOR—

Calculator—designed for 1½-ton trucks, showing probable life of tire, appropriate sizes, and actual tire costs.

Guide—for 1½-ton and larger trucks, giving easy calculation of tire changeovers,

tire sizes, rim sizes, dual spacing, inflation pressure, makes of trucks on which various combinations are possible, etc.

The B. F. Goodrich Co., Akron, Ohio.

AUTO PATROL LINE—

Catalog—"Caterpillar" Auto Patrols For Year 'Round Service," illustrated, devoted to Diesel No. 11 and No. 10, and gasoline-powered No. 11 and No. 10 Auto Patrols.

Caterpillar Tractor Co., Peoria, Ill.

MOTORS—

Bulletin—"Why Ohio Motors Are Reliable," illustrations showing some manufacturing operations in building Ohio Reliable Fractional Horsepower Motors.

The Ohio Electric Mfg. Co., Cleveland, Ohio.

BABCOCK AND WILCOX LITERATURE—

Bulletin—illustrating and describing the Babcock & Wilcox Integral-Furnace Boiler; Bulletin—devoted to Babcock & Wilcox Refractory Mortars and Plastics; Bulletin—devoted to Babcock & Wilcox Insulating Firebrick.

The Babcock & Wilcox Co., New York City.

WOOD MANTELS AND FIREPLACE FURNISHINGS—

Catalog—No. 040, illustrating and briefly describing mantels, fireplace equipment, marble hearths and facings and tile hearths and facings.

The McClamroch Co., Greensboro, N. C.

TANK HEATER—

Bulletin—devoted to Titusville Master Tank Heater which embodies several new features in construction of suction tank heaters.

The Titusville Iron Works Co., Titusville, Pa.

MIXERS AND AGITATORS—

Catalog—describing REX Moto-Mixers and Agitators and illustrating design and application, using an attractive style and employing different types of paper and different colored inks in the publication.

Chain Belt Company, Milwaukee, Wis.

HOME BUILDING PROGRAM—

Prospectus—12 pages, devoted to the 1936 "New American" Demonstration Home Building Program, designated as Publication NAH-102 and intended for those concerned in the building trades and home-furnishing fields.

General Electric Company, Schenectady, N. Y.

COMBUSTION METERS—

Catalog—RA-346, illustrating and describing Hays Combustion Recorders.

The Hays Corporation, Michigan City, Ind.

GRINDING WHEELS—

Catalog—devoted to "Chicago" Grinding Wheels and presenting list prices.

Chicago Wheel & Mfg. Co., Chicago, Ill.

UNITAIR COMPRESSORS—

Bulletin—SS-O, announcing line of UNITAIR Compressors, incorporating advanced features in compressor design.

Sullivan Machinery Company, Dept. 21, Michigan City, Ind.

BAY CITY SHOVELS, ETC.—

Catalog—"G," presenting specifications, work range diagrams and illustrations of entire lines of BAY CITY convertible shovels, cranes, draglines and trench hoes in ten sizes and models from ¾ to 1½ cubic yards; also BAY CITY trailers and truck mounted machines.

Bay City Shovels, Inc., Bay City, Mich.

ELECTRIC WELD TUBING—

Handbook—published under supervision of Formed Steel Tube Institute, presenting up-to-date information to give users a thorough knowledge of the applications of welded steel tubing, its properties, etc.

Steel and Tubes, Inc., Cleveland, Ohio.

Certain-teed

"MILLERIZED"
SHINGLES & ROOFING
WITH PATENTED
"SEALED" GRANULES

SALES OFFICES

Atlanta, Georgia, 1111 Rhodes Haverly Bldg.
Baltimore, Maryland, 1309 Lexington Bldg.
Certain-teed Products Corp. of Va., Ninth
and Main Sts., Richmond, Va.

Plant located at Savannah, Georgia

CERTAIN-TEED PRODUCTS CORP.
General Offices . . . New York, N. Y.

SOUTHERN MADE FOR SOUTHERN TRADE

VEN-ITE
THE MONARCH OF FLOORS

FLOORING
with 4 to 7 times the Abrasion Value
of ordinary cement floors

Ven-ite is a dense, heavy duty floor which suspends oils, greases and stains preventing them from penetrating into the body of the floor. Ven-ite Floors cannot and will not dust and are especially adapted for a Warehouse because they are non-skid and will withstand heavier loads because they contain aggregates that will not crush or roll out under the most severe traffic conditions.

Before you buy floors of any kind, investigate "Ven-ite"—the better, denser, stronger cement flooring.

Ven-ite Floors—designed to meet specific conditions—will withstand the heaviest industrial trucking. They are waterproof, dustless, highly resistant to most acids, unaffected by oil, grease, atmospheric conditions.

Ven-ite floors show the lowest per square foot per year cost of any floor. Let us send details.

VEN-ITE COMPANY, INC.
252 South Broad Street, Philadelphia, Pa.

.... **Genuine RU-BER-OID**
now obtainable with **EASON FLAPS***



**Ingenious 7-Layer Seam
SEALS NAILS—PREVENTS LAP LEAKS**

WE COULDN'T improve Genuine RU-BER-OID Roll Roofing, so we improved its method of application. The Eason Flap affords 7 layers of protection at the former weakest point of a roll roofing roof—the seams. With Eason Flaps all nails are sealed with two layers of fabric and one of asphalt seam cement. Nails cannot rust or pop out because of heat. Virtually a 7-layer, built-up seam with closed lap edge, there is no opportunity for wind or water to get under.

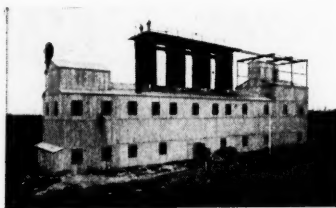
Eason Flaps are supplied with Genuine RU-BER-OID Roll Roofing at only a small additional cost. It will pay you to investigate. WRITE DEPT. M-5 *Patented

RU-BER-OID

ROOFING AND BUILDING PRODUCTS

THE RUBEROID CO., EXECUTIVE OFFICES: 500 FIFTH AVE., NEW YORK CITY

STEEL BUILDINGS COST LESS!



Less in dollars and cents per square foot of floor space than any other permanent structure. Standardized design or "tailored-to-fit." Rigid, weather-tight. Quickly constructed by ordinary labor. Easily altered or relocated. Phone South 2040 for information.

MARYLAND METAL BUILDING COMPANY

RACE & McCOMAS STS. • BALTIMORE, MD.



NOT ONE OF MY CUSTOMERS
HAS EVER COMPLAINED
ABOUT LYONORE

Fortified against corrosion by Chromium and Nickel—no wonder Lyonore Metal gives longer-lasting, trouble-free service wherever it's used. Write now for full details about this remarkable, corrosion resisting alloy.



LYON, CONKLIN & CO. INC. BALTIMORE, MD.

MAY NINETEEN THIRTY-SIX



Salt treated sub-flooring laid on Creosoted stringers and nailing strips, each treated by our Pressure Process.

The Permanence of
TREATED WOOD
in Building Construction

Eliminate the need for expensive Replacements and Repairs by the use of Structural Lumber preservatively treated by our Pressure Processes with Standard, approved chemicals. Treated Lumber has many times the life of Untreated Lumber and will give a lifetime of satisfaction with low maintenance costs.

Detailed Information, Prices and, if necessary, the services of one of our Engineers may be had without cost to you, by writing our territory Sales Office or communicating direct with

**THE
WOOD PRESERVING
CORPORATION**

Koppers Building

Pittsburgh, Pa.

AYER & LORD DIVISION

Affiliate

CENTURY DIVISION

NATIONAL LUMBER & CREOSOTING CO.

SALES OFFICES

Baltimore, Md. . . Boston, Mass. . . Charleston, S. C. . . Chicago, Ill.
Columbia Park, O. . . Denver, Colorado . . . Houston, Texas . . . Kansas
City, Mo. . . Marietta, O. . . Memphis, Tenn. . . Montgomery, Ala.
New York, N. Y. . . Newport, Del. . . Philadelphia, Pa. . . Pittsburgh, Pa.
Reed City, Mich. . . St. Louis, Mo. . . Superior, Wis. . . Texarkana, Ark.-Tex.

INDUSTRIAL NEWS

Republic Steel Distributors

Three new distributors for products of Republic Steel Corporation, Cleveland, Ohio, have been announced by N. J. Clarke, vice president in charge of sales. Equitable Equipment Co., Inc., New Orleans, La., will distribute ENDURO Stainless Steel; York Corrugating Co., York, Pa., and Sheet Metal Manufacturing Co., Inc., Stamford, Conn., have been named Toncan Iron Sheet distributors. The latter is a branch of the same firm in Brooklyn, previously appointed distributor of Toncan sheets.

Building Improvement Loans Up

President Walter B. Harris of the Ruberoid Purchase Corporation, building loan subsidiary of The Ruberoid Co., New York City, manufacturers of asphalt and asbestos building and roofing products, reports a gain of 50% in the first quarter of 1936 over the corresponding period in 1935 in the number of loans made, largely to home owners, for the improvement of properties located in virtually every section of the United States.

Johns-Manville Distributors

Tomlinson Co., Inc., B. F. Rogers, general manager, Greensboro, N. C., has become distributor for central North Carolina of Johns-Manville Sales Corporation, New York City. Organized in 1900, the Tomlinson Company, wholesale plumbing and heating supply dealers, now have several stores in Pennsylvania; in Richmond, Norfolk and Lynchburg, Va., and in Durham and Greensboro, N. C. Earle Mauldin, who has had wide experience in engineering and construction, will represent Johns-Manville at Greensboro, while W. S. Eskridge is also connected with that firm at Greensboro as manager of the roofing and building material department.

Tanks for Naval Stores

The April issue of The Water Tower, official publication of Chicago Bridge & Iron Works, Chicago, features interesting descriptions and illustrations of two installations of tanks which the company made for two different methods of naval stores production. One installation was made for The Continental Turpentine & Rosin Corp., at Laurel, Miss., which employs the steam distillation process, and the other for the West Florida Naval Stores Co., Youngstown, Fla., which employs the method of refining crude gum spirits from living pine trees.

Orders 40 White Coaches

To provide the best possible means of mass transportation for 5,000,000 visitors expected to attend the Great Lakes Exposition, the Republican National Convention, and the National American Legion Convention this summer, the Cleveland (Ohio) Railway Company has purchased a fleet of 40 new "Underslung Power" White City Coaches, according to J. A. Kiggen, Jr., sales manager of the White coach division. Production of the new coaches, to cost approximately \$350,000, will be started immediately by the White Motor Company of Cleveland.

New Streamlined Locomotive

Completed a short time ago in the Pennsylvania Railroad's works at Altoona, Pa., that company's newest streamlined coal-burning locomotive—striking in design and the product of aerodynamic science—is gaining attention as a radically new departure in railroad motive power. The new engine is intended for high-speed through passenger service.

Enlarge Tractor Plant

The J. D. Pittman Tractor Co., Birmingham, Ala., is now occupying its new and enlarged plant, with a total area of 60,000 square feet of floor space. The expansion doubled its display and stock rooms, parts department, repair and rebuilding shops. The company is district distributor for a number of prominent road-building and construction equipment manufacturers.

Trained in First Aid

The plant of the American Rolling Mills Company at Middletown, Ohio, is declared to be the first steel plant in the United States employing more than 4,000 men to be completely trained in the use of first aid under the direction of the United States Bureau of Mines, Pittsburgh, Pa. In all, 4,199 employees have taken the training course and received their certificates from the Bureau of Mines.

Complete Large Sugar Warehouse

(Continued from page 43)

Principal sub-contractors included:

Sprinkler System—Automatic Sprinkler Co., Baltimore.
Heating—Paul-Rice Engineering Co., Baltimore.
Electrical Work—H. E. Crook Company, Inc., Baltimore.
Temperature Controls—Johnson Service Co., Baltimore.
Brickwork—Ben Farrow & Son, Baltimore.
Precast Concrete Sills—Nelson, Inc., Baltimore.
Steel Floor—Kalman Floor Co., New York City.
Roofing and Metal Work—Wm. F. Zeller Co., Inc., Baltimore.
Ridge Ventilator for Skylights—The Swarthout Co., Cleveland, Ohio.
Corrugated Roofing and Siding—The McCormick Asbestos Co., Baltimore.
Painting—E. L. M. Fishpaw, Baltimore.
Glass—Swindell Bros., Baltimore.
Storm Water Drainage—P. T. Barry, Baltimore.
Fire Doors—Walter S. Brauns, Baltimore.
Pile-Driving—Raymond Concrete Pile Co., Baltimore and New York City.
Cast Slab Roof—Federal-American Cement Tile Co., Chicago, Ill.
Structural Steel—Ingalls Iron Works, Birmingham, Ala.
Reinforcing Steel—Concrete Steel Co., New York. (Charles A. Weiller, Baltimore, Repr.)

Miscellaneous Iron—Samuel J. Creswell Iron Works, Philadelphia, Pa.

Steel Windows—Truscon Steel Co., Youngstown, Ohio.

Metal Doors—Kinnear Manufacturing Co., Columbus, Ohio.

Skylights—H. H. Robertson Co., Pittsburgh, Pa.

Spring Garden Brick—United Clay Co., Baltimore.

Lumber—James Lumber Co., Baltimore.

Concrete—Alan E. Barton, Baltimore.

Bricks—United Clay & Supply Corp., Baltimore.

Masonry Supplies—Robert A. Green Co., and Maryland Lime & Concrete Co., both Baltimore.

C. E. Richmond is manager of the Baltimore branch. B. Neal Harris, vice president, of the Coca-Cola Fountain Sales Corporation in the Eastern Region, also makes his headquarters in Baltimore. The territory served reaches as far north as New York and includes Pennsylvania, Eastern Ohio, West Virginia, part of New Jersey, and coast points.

Syrup manufacturing plants also are located in Atlanta, New York, Chicago, New Orleans, Los Angeles, and Dallas. The Baltimore operation benefits to a large extent through the development of a steadily expanding export market.

Florida Beach Property For Sale

*Ocean frontage
on Anastasia Island
near St. Augustine*

*Town property
at Flagler Beach
Flagler County*

*Investigate the possibilities of Beach
property for development
in Florida*

Model Land Company
Flagler System
 St. Augustine, Florida

WOLMANIZED LUMBER

Protected from Decay or Termite attack. Clean to handle. Holds paint well. Preservative is strongly fibre fixed, non-volatile and somewhat fire retardant.

American Lumber & Treating Co.

37 W. Van Buren St., Chicago

Branch Offices: New York—Boston—St. Louis
Shreveport—Los Angeles—San Francisco.

Pressure Treating Plant Service available from:

Carbondale, Ill., Charleston, S. C., Crossett, Ark., Fordyce, Ark., Franklin, Va., Franklin Park, Ill., Green Springs, W. Va., Houston, Tex., New Orleans, La., Savannah, Ga., Shreveport, La., Texarkana, Tex., Wilmington, Cal., Wauna, Ore.

LONG LIFE TO LUMBER!

To add from 8 to 20 times the ordinary life and service you might expect from your lumber, use only pressure-preserved woods treated with ZMA or Creosote. Eppinger & Russell Co. has, for 58 years, been treating poles, ties, posts, piling, cross arms, cross ties and other timber for the nation's leading industrial firms and utilities. Safeguard your lumber against dry rot and termites by employing this outstanding wood-treating service.

PRESSURE-TREATING PLANTS AT:

Jacksonville, Fla.

and

Long Island City, N. Y.

WOOD PRESERVERS SINCE 1878
EPPINGER & RUSSELL Co
84 Eighth Ave., NEW YORK CITY

CREOSOTED TIES, PILING, POLES, POSTS, CROSS ARMS, and LUMBER

WOLMANIZED LUMBER—

Decay and Termite Proof—Can Be Painted

Docks for Ocean Vessels

American Creosote Works, Inc.
New Orleans, La.

Atlantic Creosoting Co., Inc.
Norfolk, Virginia

Plants at: New Orleans; Winnfield, La.; Louisville, Miss.;
Savannah, Ga.; Jackson, Tenn., and Norfolk, Va.

HUTTON & BOURBONNAIS CO.

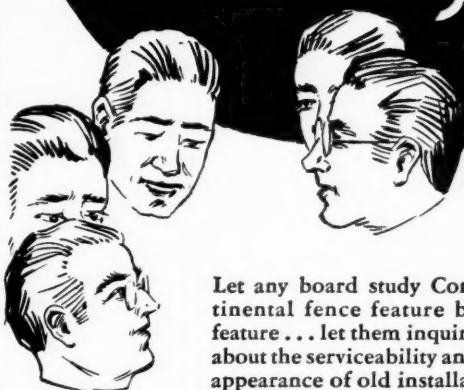
HICKORY, N. C.

Industrial Crating, Box Shooks, Rough and Dressed Lumber, Oak Flooring, also Pinus Strobus Pattern Lumber, White Pine, N. C. Pine, Oak, Poplar and Chestnut.

INQUIRIES SOLICITED.

THE BOARD DECIDED

The Most Modern
FENCE WAS THE
Best Buy!



Let any board study Continental fence feature . . . let them inquire about the serviceability and appearance of old installations . . . let them put Continental Chain-Link fabric

through any laboratory tests . . . let the man with the sharpest pencil figure the cost . . . Continental Chain-Link fence is made to sell in competition with any or all other makes.

Continental is the most modern fence and embodies many new features both metallurgical and structural that add to its quality and dependability. Special-analysis copper-bearing steel—wire heat-treated for tensile strength and resilience—heavy coating of hot-dipped zinc—and many other modern features make Continental Chain-Link fence serve better and last longer.



CONTINENTAL Chain-Link FENCE

MAIL THIS COUPON . . . TODAY

CONTINENTAL STEEL CORP., General Offices, Kokomo, Indiana.
(Plants at Canton, Kokomo, Indianapolis)

Tell us without obligation, more about your complete line of Chain-Link fence and erection service.

Name.....

Address.....

Boost Output High-Carbon Spring Rods and Wire

Bethlehem Steel Co. Installs Fourth Patenting Unit at Sparrows Point, Md., Plant

WITH the installation of a fourth unit in the wire-making division of the Sparrows Point, (Maryland), plant of the Bethlehem Steel Company, the monthly capacity of patented high-carbon spring rods and wire at the plant has been substantially increased.

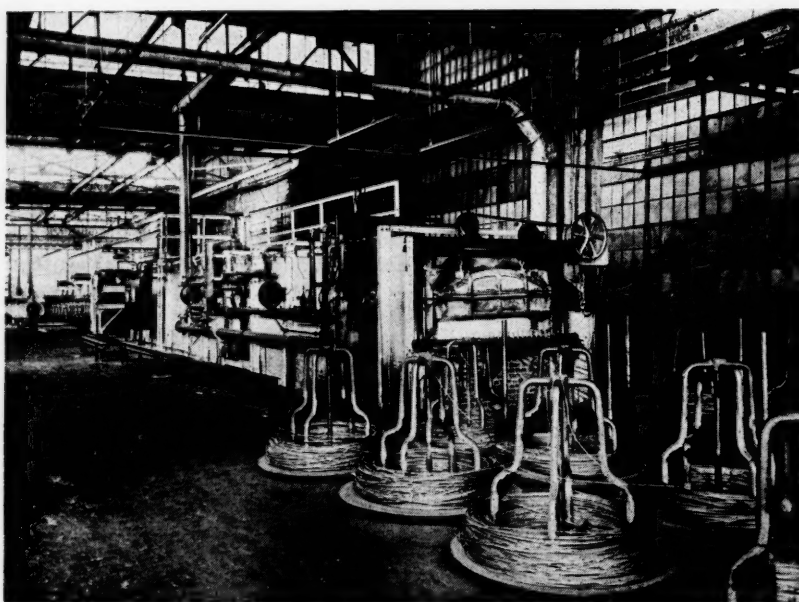
The four units, the first of which was installed at the plant in 1930, are housed in a building, 600 by 75 feet, adjoining the main wire-drawing room.

All furnaces are of the semi-muffle type, top-fired with oil and provided with

automatic temperature regulation. The heating of the stock is accomplished by the use of radiant heat.

This "patenting" installation is so flexible that any individual grade of stock can be given the proper preparatory heat treatment best adapted for its individual application. The types of patenting available cover the complete range from air-patenting to special lead-patenting for all of the quality classifications of high-carbon wire, which have been developed for industrial application.

Wire Making Division At Sparrows Point Mill



Oil Plants Expand

The M. W. Kellogg Co. Adding New Units to Texas Refineries

OVER the past few years expansion of existing refining facilities and the erection of costly new refineries to handle petroleum products has been an outstanding feature of industrial development in the states from Maryland to Texas. Many millions of dollars are being invested in highly efficient new units, representing the newest offerings of research engineers, chemists and equipment manufacturers cooperating with leading oil companies.

The M. W. Kellogg Co., with general offices and works at Jersey City, New Jersey, recently completed and has work now under way on important installations, notably in Texas.

At the Texas City, Tex., plant of the Pan-American Refining Co., it is installing a combination topping and cracking

unit designed for a capacity of 36,000 barrels daily. At the Atlantic Refining Company's plant at Atreco, Tex., the Kellogg contract calls for a combination topping and cracking unit and integral polymerization unit of 20,000 barrels daily capacity, along with miscellaneous refinery equipment.

Among the installations recently completed are the following:

Magnolia Petroleum Co., Beaumont, Tex., combination topping and cracking unit with stabilizer, 32,600 barrels daily capacity.

Magnolia Petroleum Co., Fort Worth, Tex., revamping an existing cracking installation, 2,000 barrels daily capacity.

Magnolia Petroleum Co., Beaumont, Tex., revamping of four existing cracking installations, 12,000 barrels daily capacity.

Gulf Refining Co., Fort Arthur, Tex., absorption and stabilization unit, 8,000 barrels daily capacity.

Modern Bank Policies

(Continued from Page 37)

Good management will keep the proper balance between the cost of money and its selling price.

Easy and loose credit policies have done infinitely more harm to the public than so-called tight credit. Public interest demands a sensible, informed constructive credit policy, and that means refusing loans as well as making them. Good management has no choice but to seek a high degree of safety of principal and be satisfied with a small return.

A discussion of a bank's investment program would not be complete without mention of installment financing and personal loans. These have to do almost entirely with consumer credit. Although bankers have been perfectly willing to loan money for consumer purposes in loans secured by receivables, they have been reluctant to make consumer loans direct, because they felt it was piddling business.

However, developments during the last 25 years, growing largely out of the growth of the automobile, radio and refrigerator business, have wrought a revolution in the consumer credit field. The total amount of consumer credit outstanding in the form of loans in 1935 indicated, from figures available, a total in excess of all commercial loans made by all of the banks of the country.

Opportunities for the Grasping

Had bankers matched their capacity with initiative, we might have had this consumer loan business, and at a net result that would have enabled us to solve the current problem of diminishing profits in our business.

There is no question about safety of principal. The diversity of risk gives greater safety than either the commercial loan or bond account.

There is a continuing liquidation which meets the requirements of liquidity. Money invested in loans which liquidate themselves within twelve months are sufficiently available for the deposits involved.

To preclude political control in banking, our leadership must accept the challenge to see that American banking of its own desire and effort shall be kept clean, sound, profitable and dependable. This calls for a high order of leadership.

We must bridle the desire to accumulate great riches. Englishmen look with suspicion upon a banker who becomes conspicuously rich, and rightly so.

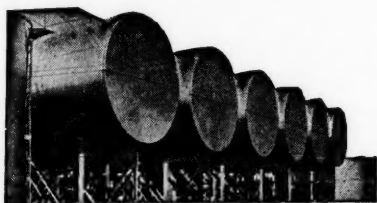
With reference to the wider political aspects and implications of the times, we should take the course of statesmen and not that of politicians. The banker has no place in controversial politics, but this does not mean he should remain quiet when great principles are at stake.

In our advertising and personal relations with the public there has been too little frankness, too little information, too little backing-up on the inside of what we say outside we can do.

Perhaps we, along with all of our fellow citizens, need to repossess ourselves of, and exemplify, those homely virtues which characterized our fathers, and which go to make up the meaning I have in mind for that word character—courage, industry, intelligence, initiative, simple living, thrift and sacrifice.

SOUTHLAND PRODUCTS

—WELDED OR RIVETED—



CHATTANOOGA BOILER & TANK CO.
CHATTANOOGA, TENN.

We now manufacture and offer to the trade tanks in all sizes for pressure or gravity work. Also other steel equipment of either

WELDED
OR RIVETED
CONSTRUCTION

This applies to field as well as shop built equipment.

Write us for information and quotations.

DAVIS CYPRESS TANKS



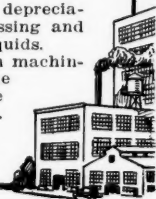
Some especially desirable attributes must surround Davis Tanks—when you realize that leading manufacturers and railroads of the South have bought them repeatedly for 46 years. In truth, there are two reasons:

1. Cypress is unequalled for durability, low depreciation and varied usefulness in storage, processing and handling chemicals and other liquids.

2. Davis tanks, built by modern machinery and skilled men, can be made to fit any factory need, in any size and shape. Catalog on request.



G. M. DAVIS & SON
P. O. Box 5, Palatka, Florida



STEEL PLATE CONSTRUCTION TANKS STACKS DREDGE PIPE

Acid Tanks	Digestors	Jacketed Tanks	Settling Tanks
Breechings	Dryers	Molasses Tanks	Standpipes
Condensers	Filters	Oil Storage Tanks	Stills
Coolers	Gasoline Tanks	Pressure Tanks	Vacuum Tanks

LANCASTER IRON WORKS
LANCASTER, PA.

Water Purification Plants

Any Type—Any Purpose—Any Capacity

Dry Chemical Feed Machines
Swimming Pool Filters

E. W. BACHARACH & CO.

Rialto Bldg.

Kansas City, Mo.

WATER FILTERS

Pressure and Gravity type for Municipal Water Supplies, Rayon Manufacturing Plants, Textile Finishing Establishments, Raw Water Ice Plants, Laundries, Etc.

ROBERTS FILTER MANUFACTURING COMPANY
604 Columbia Avenue
Darby, Pennsylvania

Filtration and Pumping Equipment

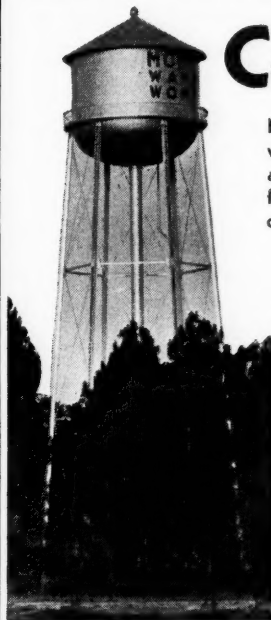
For Water Works and Swimming Pools
Sales and Installation

BURFORD, HALL AND SMITH

140 Edgewood Avenue, N. E.,
Atlanta, Georgia

For Warm Relations in Fabrication

Cities Served by Cole Tanks



Many municipal or privately owned water works have had us build tanks and elevated towers to specification from their own engineer's design or ours. A few of these cities include:

CHARLOTTE, N. C.
(Million gallon tank)
CLEARWATER ISLAND, FLA.
DANVILLE, KY.
MOBILE, ALA.
McPHERSON, KAN.
ST. PETERSBURG, FLA.
ALBANY, GA.
GASTONIA, N. C.
(Million gallon tank)
CEDARTOWN, GA.
SPARTANBURG, S. C.
(Million and a half gallons)
NEWMAN, GA.

In addition to water tanks we also build tanks for acid, dye, oil, creosote, chemicals, etc., as well as other fabricated products of COLE steel and alloy steel plate. Let us figure on your requirements.

An erection for Mobile Water Works

Write for "Tank Talk"—No. 8-D.

R.D. COLE MANUFACTURING CO.
NEWNAN EST. 1854 GEORGIA

STRUCTURAL for BUILDINGS STEEL and BRIDGES

Capacity 1000 Tons per Month. 3000 Tons in Stock
Carolina Steel and Iron Company

The Largest Steel Fabricators in the Carolinas

Greensboro

North Carolina

Sales Offices: 709 Nissen Bldg., Winston-Salem, N. C.

Bristol Steel & Iron Works, Inc.

STRUCTURAL STEEL

For Bridges, Buildings and All Industrial Purposes

Steel Plate and Miscellaneous Iron Work
Complete Stock Shapes, Plates, Sheets and Bars for
Immediate Shipment

BRISTOL, VIRGINIA-TENNESSEE

"SAVE WITH STEEL"

BELMONT IRON WORKS

PHILADELPHIA

NEWYORK

EDDYSTONE

Southern Sales Offices, Charlotte, N. C.

Engineers . Contractors . Exporters

STRUCTURAL STEEL

BUILDINGS AND BRIDGES

RIVETED-ARC WELDED

BELMONT INTERLOCKING
CHANNEL FLOOR

Write for Catalogue

Main Office—Philadelphia, Pa.

New York Office—44 Whitehall St.

DEVELOPING NEW OUTLET FOR COTTON

Experiments Now Under Way for Use of Fabric in Roads and Airport Runways of Significance to Textile Manufacturers and Cotton Growers

HIGHWAY - BUILDING and airport runway construction promise to develop important outlets for cotton.

Every mile of bituminous surfaced road reinforced with cotton fabric absorbs the equivalent, in the form of fabric, of from 8 to 10 bales of cotton. The mileage of existing bituminous roads repaired, retreated or otherwise improved annually would require prodigious quantities of cotton fabric if the cotton road principle was standardized. In addition, there are today some 900,000 miles of unimproved dirt roads of which, it is estimated, at least 600,000 miles will ultimately be given a bituminous surfacing.

More than that—every advantage of cotton fabric reinforcing claimed for bituminous surfaced highways is equally applicable to the construction of airport runways where maximum resilience and smoothness of surface are imperative regardless of initial construction costs.

The Army's construction department has already approved the use of a cotton reinforcing membrane in the building of a runway at Riley Field, Fort McClellan, Ala. The Air Commerce Division of the Department of Commerce has approved use of the fabric in the building of runways at Federally financed airports. The state of New Jersey, improving the Newark Airport, greatest of American landing fields, is building a 700-foot long cotton reinforced runway. Commercial aviation operators are becoming increasingly interested in the wider use of cotton reinforced runways not only as a matter of greater safety but of substantial maintenance economy.

Cotton roads probably will develop into a tremendously important new outlet for cotton. The possibility is of significance to every cotton growing and cotton manufacturing state. Cotton roads are only one, although at the moment the most spectacular, of the cotton manufacturing industry's efforts, through its Cotton-Textile Institute, to increase the consumption of cotton. All of them deserve the wholehearted support of every element in the "cotton South."

Nature in a petulant mood and the "powers that be" at Washington may be credited with "assists" that are going far to establish cotton as a road-building material.

One of the severest winters on record

By

C. K. Everett,

Manager, New Uses Section,
The Cotton-Textile Institute, Inc.,
New York City

and unprecedented floods in many sections ravaged highway systems generally. In some states from 1,200 to 1,400 miles of highways must be retreated or rebuilt completely. In others, hundreds of miles of road have been closed to traffic for varying periods this spring with resultant burdens in increased cost and inconvenience to highway users. Everywhere interest centers on *better* good roads.

Building Florida Resort

Development of 3000-Acre Tract to Cost
\$1,000,000

WAKULLA SPRINGS, FLA.—Work is under way here on a \$150,000 club house, marking the beginning of a development that involves an outlay of \$1,000,000 for Wakulla Springs, Inc., of which Edward Ball, Jacksonville, Fla., financier, is president.

The 3,000-acre holdings of the corporation include what is considered one of the largest springs in the world with a flow estimated at 196,000 gallons a minute. The water is so clear it is said a dime resting on the bottom, 185 feet below the surface, may be clearly seen.

The club house, 120 by 175 feet, is of steel frame with heavy brick walls and cement floors, and a Spanish tile roof, the architecture being of Spanish design.

Plans call for a tropical fish aquarium near the concrete pier and swimming beach. A large concrete pool with regulated water temperature will contain many varieties of fish, while another section will be used for alligators, turtles, etc. Also a natural history museum will house skeletons of prehistoric animals recovered in the locality, together with animals and birds now found in the state.

Marsh & Saxelbye, Jacksonville, are the architects for the building improvement. Foster Barnes is the landscape architect for the elaborate gardens which will be a feature of the development; Earl W. Brown will be the manager of the project. N. W. Green is construction engineer at the building site.

Providentially, even before the spring freshets broke, the Department of Agriculture had determined to allot \$1,300,000 for a nation-wide demonstration of the practicability of cotton fabric reinforced bituminous surfaced roads. The program envisioned a few miles of such road in every state—a grand total of 1,000 miles.

But the Department had reckoned without Nature.

The result is evidenced in the warning received from the Department by the Cotton-Textile Institute and relayed to state highway commissions everywhere that the Department's allotment is in danger of exhaustion before more than a score of the states have signified intentions to participate in the program.

As a matter of fact more than one-half of the fabric available was already "spoken for" within a comparatively few days of the Department's announcement by applications from the highway authorities of New Jersey, Michigan, Indiana, North Carolina, South Carolina, Texas, Georgia, Alabama, Mississippi, New Hampshire, and Minnesota.

In addition, by advices to the Department or the Institute, authorities in New York, Illinois, Nevada, North Dakota, Massachusetts, Connecticut and Rhode Island had signified, as this was written, their intention of requisitioning cotton fabric sufficient for extensive projects as soon as surveys under way determined locations and amounts of fabric required.

South Carolina, which pioneered with the reinforcing principle to build the first cotton road in 1926, will build another 50 miles this summer as will New Jersey where cotton roads have already withstood, highly successfully, the rigors of two northern winters. Michigan's 1936 road building program includes at least 34 miles of cotton reinforced roads; North Carolina has scheduled 100 miles; Indiana will build 25 miles; Texas, 50 miles; Georgia, 50 miles; Alabama, 100 miles and in Minnesota and New Hampshire, and as yet undetermined mileage is to be built during the coming summer.

Other states, including New York, Illinois, Nevada, North Dakota, Massachusetts, Connecticut and Rhode Island are expected to undertake similarly extensive projects as soon as surveys, now under way, to determine locations and the amount of the cotton fabric required, are completed.

The Arundel Corporation

BALTIMORE, MD.

Constructors and Engineers
Distributors of Sand-Gravel-Commercial Slag

A COMPLETE ORGANIZATION

Our complete organization with years of experience in successfully executing large construction contracts of various kinds is prepared to undertake the construction of earth, masonry and concrete dams, drydocks, dredging of all kinds, river and harbor improvements, deepening channels, hydraulic filling and rock work, tunnels, railroad construction, sewers and waterways.

PERSONNEL:

JOSEPH V. HOGAN, President
W. BLADEN LOWNDES, Vice-President
JOHN T. DAILY, Secretary
RICHARD A. FROEHLINGER, Treasurer

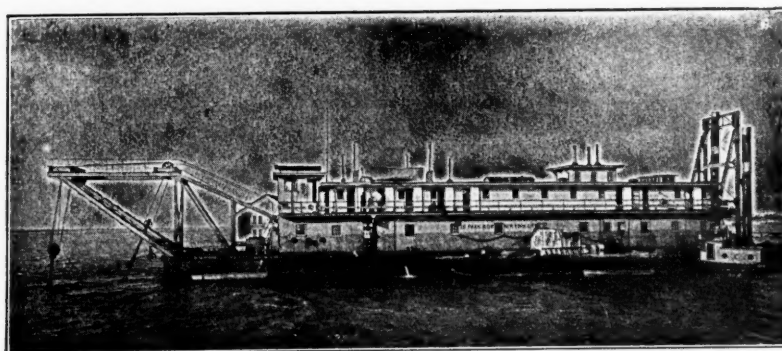
E. L. WADE, Assistant Secretary
J. N. SEIFERT, Assistant Treasurer
C. W. BLACK, Chief Engineer
HOWARD O. FIROR, General Supt.

MAIN OFFICE: Arundel Building, Pier 2, Pratt Street
BALTIMORE, MD.

Branches: NEW YORK CITY—MIAMI, FLA.—NORFOLK, VA.

DREDGING

FILLING, LAND RECLAMATION, CANALS, PORT WORKS
RIVER AND HARBOR IMPROVEMENTS—DEEP WATERWAYS AND SHIP CHANNELS



We are especially equipped to execute all kinds of dredging, reclamation and port works in Southern waters.

Correspondence invited from corporate and private interests everywhere.

Contractors to the Federal Government

ATLANTIC GULF AND PACIFIC CO.

NEW YORK: 15 Park Row

HOUSTON, TEXAS: Scanlan Building

Railroad Buying Picks Up

Substantial Increase In Number Cars and Locomotives On Order Purchases For Past Three Years, However, But Half 12-Year Average

RENEWED railroad buying in anticipation of improved railroad traffic is reflected in a report on equipment orders by the Association of American Railroads.

New freight cars of all types on order by the Class I railroads of the United States totaled 13,562 on April 1, 1936, compared with 482 cars on order at the same time last year.

New steam locomotives on order April 1, this year, totaled 52 compared with one on the same date last year. Twenty-four new electric locomotives were on order this year, compared with 61 electric locomotives on order April 1, 1935.

New passenger equipment on order April 1, this year, called for 69 cars as against 76 cars on the same day last year.

In the first three months of this year, 2,984 new freight cars were placed in service in this country compared with 568 cars in the corresponding three months of 1935. For the entire year of 1935 there were 8,903 new freight cars

placed in service.

In addition to increased orders placed for new cars and locomotives, substantially larger sums have been authorized this year for general improvement work on track, bridges, structures and other equipment. Nearly twice as many tons of rail were ordered during the first three months of this year as in the first three months of 1935.

Railroad purchases include more than 60,000 different items carried in stock for regular railroad operation. Railway purchases in 1935 aggregated \$593,025,000, which was slightly below the purchases in 1934 but considerably higher than those of 1933, according to reports filed by the railroads with the Bureau of Railway Economics. This compares with the annual average of \$1,100,000,000 for the twelve years 1923-1934.

Railroad purchases for the past three years have averaged only one-half the twelve-year average which may be taken as normal. This reduction in buying is due not only to decreased requirements for everyday operation but to sharp curtailment of additions and betterments,

Erecting Ice Plant

Enid, Okla., Firm Installing Up-To-Date Equipment in 100-Ton Capacity Unit

Enid, Okla. — A 75-ton capacity raw water ice plant, with air-conditioned office, is being built by the Enid Ice and Fuel Co., N. E. Crumpacker, president.

Natural gas is used as fuel for engines driving generators, supplying all motors as well as providing current for lighting. The equipment is of the latest and most modern type.

Plans and specifications for the building were prepared by R. W. Shaw, architect. The general contractor is the McMillan Construction Co. Among the firms supplying major equipment items are the following:

Fairbanks, Morse & Co., Kansas City, Mo., and Chicago, Ill.

The Cooper-Bessemer Corp., Mt. Vernon, Ohio.

The Gates Rubber Co., Denver, Colo. Boardman & Co., Oklahoma City, Okla.

resulting from reduced railway income. A continuance of the revival of purchases of rail and equipment experienced in the first quarter of 1935 necessarily depends upon the future trend of traffic and revenue.

SEWER PIPE
CULVERT PIPE
DRAIN TILE
WALL COPING
METER BOXES



FLUE LINING
SEPTIC TANKS
FIRE BRICK
GRATE BACKS
FIRE CLAY

We solicit your inquiries

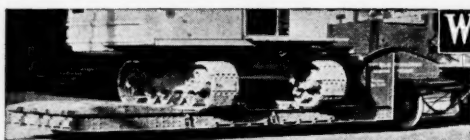
LEE CLAY PRODUCTS COMPANY
CLEARFIELD, Rowan County KENTUCKY

THE DIAMOND GRIT CO.

Philadelphia Road & 66th St.
BALTIMORE, MD.

BLAST SAND FILTER SAND
TRACTION SAND FILTER GRAVEL

We can furnish any special grading desired



WILLIAMS
"ARCH-GIRDER"
TRAILERS
EASIER TO LOAD
TO HAUL
AND TO STOP!
Write for
Bulletin.

THE WELLMAN ENGINEERING CO.
7003 CENTRAL AVE., CLEVELAND ~ OHIO

SAND—GRAVEL—BRICK FILTER GRAVEL

Washed Sand and Gravel for Concrete
Roads and Buildings

Filter Gravel, all sizes—Building Bricks

FRIEND & CO., INC. River St., Petersburg, Va.



THE GEORGIA MARBLE COMPANY

Producers and Manufacturers of

GEORGIA MARBLE

TATE, GEORGIA

Atlanta·Chicago·Cleveland·Dallas·New York

TARPAULINS

Waterproof and Plain - - - All Sizes
Immediate Delivery - - - Manufacturer's Prices
Canvas in every weight for every use.

ATLANTA TENT & AWNING COMPANY
Box 374 ATLANTA, GA.

Northern Hard Rock Maple Flooring

BLOCK

Holt Hardwood Co., Oconto, Wis.

STRIP

MEMBERS OF MAPLE FLOORING MANUFACTURERS ASSOCIATION

G LAMORGA N

PIPE & FOUNDRY CO.

LYNCHBURG, VA.

Manufacturers of
Cast Iron Pipe and Fittings
For Water and Gas Service

CRUSHED LIMESTONE

Best for All Purposes

We manufacture all sizes of stone suitable for all classes of road building and concrete work where only a high-grade limestone is required.

Quarries opened up in 1912.
Capacity 8000 tons daily.

Four Quarries

Blue Ridge, Va. Pembroke, Va. Pounding Mill, Va.
Boxley, Greensville County, Va.

W. W. BOXLEY & COMPANY

Room 711, Boxley Building, ROANOKE, VA.

CONVERSE BRIDGE & STEEL CO.

Chattanooga, Tennessee

Structural Steel for all Industrial Structures,
Buildings and Bridges.

LARGE STOCK FOR IMMEDIATE SHIPMENT

AUSTIN BROTHERS BRIDGE CO.

Structural Steel and Ornamental Iron
Bridges, Reinforcing and Guard Fence

ATLANTA, GEORGIA

Oakland City Station

MASCOT CHATTS

ASPHALTIC ROADWAY GRAVEL
ROOFING GRAVEL CRUSHED STONE
ASPHALT FILLER DUST



American Limestone Co., Knoxville, Tenn.

PAGE FENCE

PIONEERS WITH A
New LINE POST



*"You'd
expect it
of Page!"*

PAGE refuses to let "well enough" alone—is striving constantly to raise the standard of fence construction. Heretofore, fence posts have been adaptations of existing sections. Now PAGE announces the new wing channel line Post designed especially for fence and fence alone, with many advantages resulting—superior galvanizing, greater strength, a far neater, more serviceable installation.

PAGE is recognized as the pioneer in the fence industry. PAGE was America's first wire fence. Since no metal is suitable for all fence conditions, we pioneered in offering fence in a variety of metals—PAGE-ARMCO Ingot Iron, PAGE "ALCOA" Aluminum, PAGE Allegheny Stainless Steel, PAGE Copper-Bearing Steel, PAGE genuine Wrought Iron.

Located conveniently throughout the United States are 92 Page Fence Distributors who will gladly consult with you, without obligation, in best solving your fencing problem. They are prepared to recommend impartially the particular metal that will give you the best service and to assume full responsibility for proper installation.

Write to any one of the offices shown below for helpful literature and name of the Page Fence expert nearest you.



PAGE FENCE ASSOCIATION

BRIDGEPORT, CONNECTICUT

New York Pittsburgh Atlanta Chicago San Francisco

This Label . . . Your Guarantee

The PAGE P-12 label identifies PAGE galvanizing which is guaranteed to withstand a minimum of 12 one-minute dips by the Preece Test. PAGE P-12 galvanizing applies not only to fence fabric but also to posts, top rail and fittings as well—your guarantee of maximum resistance to rust.

AMERICA'S FIRST WIRE FENCE... SINCE 1883

Tung Oil Consumption Gains 70% In Four Years

Industrial Consumption Mounts Steadily, Official Reports

American Crop This Year Four Times Greater Than Ever Before

COINCIDENT with the announcement of C. O. Concannon, chief of the chemical division of the Department of Commerce, that industrial consumption of tung oil in the United States has increased approximately 70% during the past four years, J. C. Adderley, president, Tung Oil Association of America, predicts a record tung nut production this season.

Total domestic consumption of tung oil last year was 127,600,000 pounds, Mr. Concannon reports. This compares with an estimated consumption of 121,500,000 pounds in 1934, 105,000,000 in 1933, and 75,000,000 during 1932.

Based on the average domestic price of 18c per pound during the year, American manufacturers paid out approximately \$23,000,000 for tung oil in 1935, according to Mr. Concannon's estimate. With the exception of relatively small quantities from the Southern States, where an American tung industry is now being developed, all of our 1935 supply of tung oil came from China.

Statistics show that the paint and varnish industry utilizes more than 75% of

the tung oil consumed in the United States. Consumption by this industry in 1935 aggregated 98,440,000 pounds, compared with 88,185,000 pounds during the preceding year, and 59,158,000 in 1932.

The linoleum industry, the second largest user of tung oil, has increased its consumption from 7,300,000 pounds in 1932 to 10,391,000 in 1935. Tung oil use in making printing ink has increased from 713,000 to 2,013,000 pounds over the same period.

The use of tung oil in various other manufacturing processes has also increased rapidly in recent years, and many new and novel uses have been found for the product. Considerable quantities are now being used in the manufacture of insulation materials for the electrical and wallboard industries, in waterproof compounds, automobile brake linings, for waterproofing paper and cloth bags, etc.

The amount of tung oil used in miscellaneous industries during 1935 totaled 16,756,000 pounds, compared with 7,892,000 pounds in 1932.

This year's crop of tung nuts "conservatively estimated at 10,000,000

pounds" by Mr. Adderley, will, he believes, represent the equivalent of 2,000,000 pounds of American tung oil a crop four times greater than any previous crop.

Tung trees escaped damage from the most severe winter season recorded and, moreover, showed no appreciable ill effects from the long, cold spring.

"The ability of the tung tree to go through a severe season like that of the past winter and still produce record crops is hailed by growers everywhere," says Mr. Adderley. "Another fact which is a source of much satisfaction to growers is that the tung trees this year give every evidence of being healthier, stronger and in better producing condition than ever before.

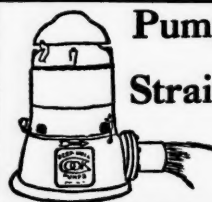
"The price of tung oil still continues to be substantially higher than the 20-year average. China, which is the only other source of supply, has failed to produce anything like the quantity needed to supply the increasing demands of industry. The uses and demands for tung oil have been constantly increasing. European countries have recently increased their competition for the insufficient supply which China is able to furnish, and this has resulted in increased prices."

Many new plantings of tung oil trees have been made during the past year and additional large acreages are to be put in groves this year, Mr. Adderley reports. He looks for the growing of tung oil trees and the production of tung oil to take the place of crops, which have in the past been overproduced and for which there is a limited market. The planting of tung oil trees is also effective, he says, in preventing soil erosion.

TURBINE WATER WHEELS

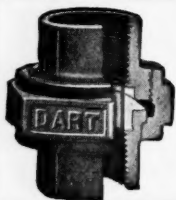
MANUFACTURED BY
DAVIS FDY. & MCH. WORKS
ROME, GA.

ESTABLISHED 52 YEARS



**Pumps—Deep-Well Plunger and
Turbine
Strainers—and other well supplies**

WATER PRESSURE SYSTEMS
A. D. COOK, INC.
Lawrenceburg, Indiana



Get **YOUR** Sample
DART Bronze-to-Bronze Union

A free sample to show you how two ground bronze seats give you twice the life from every Dart Union. Write for your sample! New Catalog and Price List No. 4-30.

E. M. DART MFG. CO.
Providence, R. I.

The Fairbanks Co., Sales Agents
Canadian Factory—Dart Union Co., Ltd., Toronto

EARLE

Cut Spur, Bevel, Herringbone,
and Worm Gears

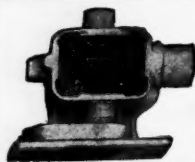
All sizes. Every description. Operating Machinery for Bridges, etc. "Lea Simpler" Cold Metal Saws.

The Earle Gear & Machine Co.

4719 Stenton Ave.,
Philadelphia, Pa.

110 State St., Boston, Mass.
149 Broadway, New York City

GEARS



CLEAN, PRECISE CASTINGS

Iron, Brass, Bronze, Aluminum,
Special Mixes

Complete Foundry Service. Pattern and Machine Shops.
We specialize in the quantity production of small and medium size castings, small machines and devices.

The **RICHMOND**
FOUNDRY & MANUFACTURING CO. Inc.

RICHMOND, VIRGINIA.

"A Dependable Source of Supply"

HIGHEST GRADE CASTINGS

Gray Cast Iron, Semi Steel, Nickel Iron
Castings up to 15 tons, machined up to 20
ft. dia., Special Machinery, Pure Nickel,
Monel Metal, Ni-Resist, Bronze and
Aluminum.

DEPENDABLE SERVICE

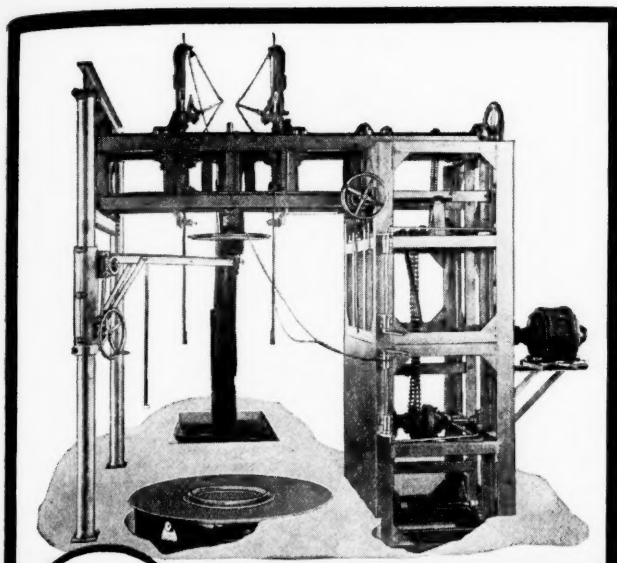
Ideally equipped for production of special
alloys of the Ni-Resist and Ni-Hard types.

Write for full information about our modern facilities

**KINGSPORT FOUNDRY & MANU-
FACTURING CORPORATION**

KINGSPORT

TENNESSEE



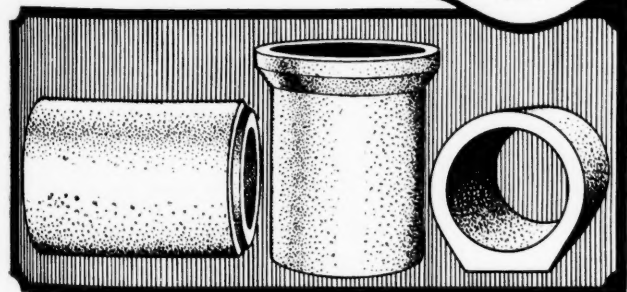
QUINN QUALITY CONCRETE PIPE

Quinn process concrete pipe surpasses most specifications because of 60% greater compression test and lowest absorption. Quinn forms produce smooth finish and eliminate bleeding at joints. Make better pipe in all sizes, at lower cost, with Quinn equipment for manual or machine production. Write for information, prices on equipment for producing all types of concrete pipe at lower cost.

QUINN 6 ft. Medium Duty PIPE MACHINE

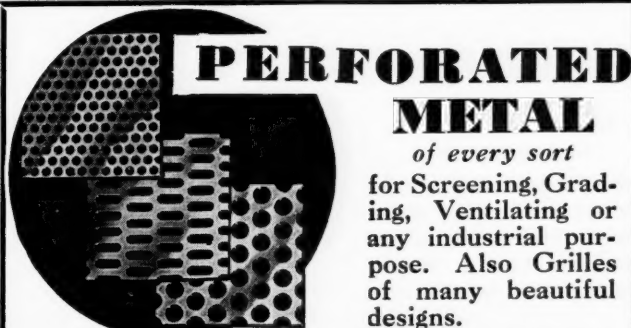
Six foot machine makes pipe 12" to 60" in diameter in 3 ft., 4 ft. and 6 ft. lengths. Machine tamping, 400 lbs. trip hammer action blows at rate of 370 per minute packs concrete in dense mass—produces smooth finish pipe of super strength and lowest absorption. Four-foot machine makes pipe 12" to 60" in diameter in 30", 36" and 48" lengths. Heavy Duty Machine has capacity up to 125 tons a day. Write for details, capacities, costs, etc.

QUINN WIRE & IRON WORKS
1605 Twelfth St., Boone, Iowa



QUINN STANDARD

Quinn Concrete Pipe construction is recognized as standard by many municipalities, drainage, sewerage and irrigation districts in asking for bids on pipe. "Quinn Standard" or equivalent means Quinn pipe has no equal.



PERFORATED METAL

of every sort
for Screening, Grading, Ventilating or any industrial purpose. Also Grilles of many beautiful designs.

5631 Fillmore St., Chicago, Ill. New York Office: 114 Liberty St.

**The Harrington & King
PERFORATING CO.**

Erdle Quality Perforated Metal

For Cotton Gins, Cotton Seed Oil and Peanut Cleaning and Grading. We solicit your inquiries.

Erdle Perforating Co., 171 York St., Rochester, N. Y.



No. 1

**MANHATTAN
PERFORATED METAL CO., INC.**

43 17-37th Street, Long Island City, N. Y.



No. 3

PERFORATORS

of All Kinds of Metals for All Industries
Write for Copper, Brass, Tin, Zinc or Aluminum Catalog



No. 7



No. 22

PERFORATED SCREEN PLATES AND SHEETS

ORES
COAL
STONE
GRAVEL

for
Cotton-Seed Oil Mills,
Cotton Gins, Phosphate Mines,
Fertilizer Plants, Cyanide
Works, Chemical Works.

CEMENT
SAND
CLAY
ETC.

Write for catalogue

CHARLES MUNDT & SONS

490 JOHNSTON AVE., JERSEY CITY, N. J.

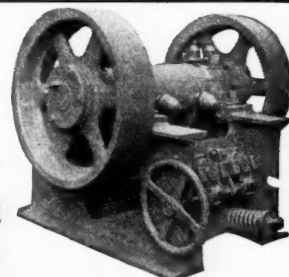
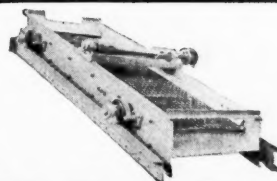
CLAY WORKING MACHINERY

For Brick, Tile and Block,
from smallest to largest capacity.

Write for information

J. C. STEELE & SONS,

STATESVILLE, N. C.



McLanahan Equipment

Single and double roll and jaw crushers, hammer mills, super dry pans,—steel log washers and scrubbers, sand drags, revolving and vibrating screens, elevators, conveyors, dryers, jigs, hoists,—complete portable, semi-portable and stationary crushing, screening and washing plants for different capacities of any materials.

McLanahan & Stone Corporation

Continuously in Business Since 1835

Hollidaysburg, Pennsylvania

To Advance Industrial Use of Farm Products

South's Economic Well-Being Vitally Affected By Broadening Markets for Farm Crops

THE second Chemurgic conference of representatives of agriculture, industry and science is to be held at Dearborn, Mich., May 12-14. These conferences, under the sponsorship of the Farm Chemurgic Council and the Chemical Foundation are for the purpose of broadening the industrial use of American farm products through applied science.

The South, producing 43 per cent of the country's crop values, has a vital interest in the work being done by these organizations. Much progress has been made in the establishment of basic industries utilizing products of Southern farms, but through research there will be opened up a far greater field for new processing enterprises bringing about a closer tie-up of agriculture and manufacturing in the South.

Special objectives of the Farm Chemurgic Council are:

To survey the variety of farm products which through applied science can be transformed into raw materials usable to industry.
To define the scientific research problems essential thereto.
To stimulate appropriate research

in public and in private institutions. To activate American industry to apply the fruits of research. To encourage the joint cooperation of agriculture, industry and science in promoting this significant development nationally.

Through this cooperative effort of manufacturers and scientists, it is hoped to:

Bring about the gradual absorption of much of the domestic farm surplus by domestic industry.
Put idle acres to work profitably.
Increase the purchasing power of the American farmer on a stable and more permanent basis, and, thereby,
Increase the demand for manufactured products, and, thus,
Create new work for idle hands to do; revive American industry; restore American labor to productive enterprise, and relieve the economic distress of the nation.

At the Conference, with headquarters at Book-Cadillac Hotel, Detroit, and the Dearborn Inn, Dearborn, Mich., will be discussed among other "newer developments", power alcohol, starch and sugars plastics, cellulose, soy beans in industry, etc. The welcoming address is to be

made by William J. Cameron of the Ford Motor Company and response by Francis P. Garvan, president of the Farm Chemurgic Council and the Chemical Foundation.

Among the topics to be discussed and the speakers representing industry are:
Science in Industry—Dr. C. M. A. Stine, vice-president, E. I. duPont de Nemours & Co.
Industry's Stake in Farm Prosperity—Fred W. Sargent, president, Chicago & Northwestern Railroad.
Tung Oil—Lamont Rowlands, Picayune, Miss.
Cotton Roads—Charles K. Everett, manager, New Uses Section, Cotton Textile Institute, Inc.
Relation of Power Alcohol to Our Economic Problems—Francis P. Garvan, president, The Chemical Foundation.
Coming Motor Fuels—Floyd F. Kishline, chief engineer, Graham-Paige Motors Corporation.
Our Domestic Petroleum Supply—Dr. Benjamin T. Brooks, Chemical Engineer, New York City.
Products of Corn—Morris Sayre, vice-president, Corn Products Refining Co.
Starch and Sugars—Dr. J. K. Dale, director of research, Staley & Co., Decatur, Ill.
Solvents from the Farm—Dr. Charles L. Gabriel, vice-president, Commercial Solvents Corporation.
Progress in Plastics—R. A. Boyer, Ford Motor Company.
Plastics in Housing—R. E. Coleman, manager, Plastics Department, General Electric Company.
Rayon and Cellophane—Dr. G. P. Hoff, manager, Chemical Research Rayon Department, E. I. duPont de Nemours & Co.
Southern Slash Pine—Dr. Charles H. Herty, Pulp and Paper Laboratory, Savannah, Ga.
Soy Bean Proteins—W. J. O'Brien, vice-president, The Glidden Co.
Soy Bean Oil in the Paint and Varnish Industry—E. E. Ware, Sherwin-Williams Co.
Mixing Soy Bean Oil and Tung Oil—M. F. Taggart, director of research, O'Brien Varnish Co.
Progress in Fertilizers—Dr. Firman E. Bear, director of research, American Cyanamid Co.

A MAIN LINE RAILROAD BRIDGE

sometimes requiring 32 starts per day.

**Sterling
High
Duty**



**Internal
Combustion
Engines**

Gas—Gasoline—Diesel Oil Engines



For lifting the span of the Penn. R.R. Lehigh Valley, Newark Bay Bridge, one Sterling Viking 11 six cylinder 425 H.P. 1200 R.P.M. engine one Viking 11 eight cylinder 565 H.P. engine, each driving General Electric generators, are employed alternately; the six cylinder engine is the reserve unit.

The fuel cost is so low and the fuel supply so inexhaustible that gasoline and gas engines, with their high thermal efficiency, are being increasingly employed. Sterling engines are built for continuous duty.

STERLING ENGINE COMPANY

Home Office and Plant
1270 Niagara Street
Buffalo, New York

Dept. C-7

Branch Office
900 Chrysler Building
New York, N. Y.

buying a POMONA

is the Right Move for 1936

It is often unprofitable to assume that because an old pump still keeps on pumping its operation should be continued. In many cases an old pump requires so much more power and lubrication in proportion to its delivery of water that a new Pomona in its place would pay for itself in a short time.

Changes in pumps are less frequent and less radical than changes in automobiles, but under Pomona's policy of vital progress, changes are made from time to time by the adoption of improved designs or better materials not previously available. Pomona Pumps—always good—are always getting better. Every Pomona Pump reflects not only our own riper experience, but also the advancements made possible by the experience of manufacturers from whom we buy materials.

Buying a Pomona is the right move for 1936—or any year.

POMONA PUMP CO.

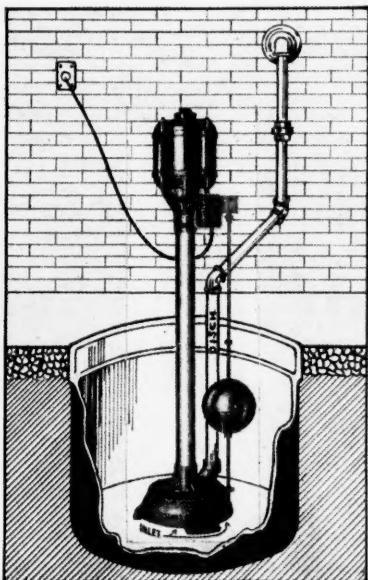
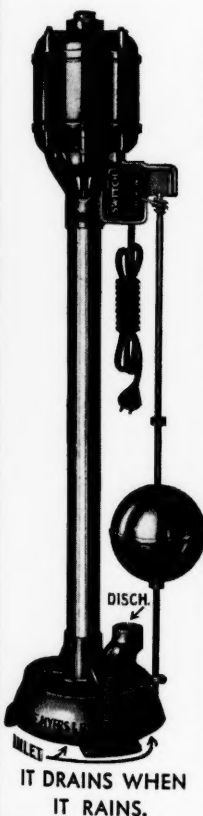
53 W. Jackson Blvd., Chicago • 206 E. Commercial St., Pomona, Cal.
101 Marietta Bldg., Atlanta, Georgia

POMONA TURBINE PUMPS

MYERS CENTRIFUGAL SUMP PUMP

Provides automatic drainage protection against flooded basements and cellars during rainy weather. Unequalled at the price for appearance, construction, durability and economical, trouble-free performance. Write for new circular and complete information.

THE F. E. MYERS & BRO. CO.
ASHLAND, OHIO



Are Your Power Costs HIGH?

This Pump Will REDUCE Them!

Have you checked your pumping costs lately? Here is a new centrifugal pump—combining every mechanical and hydraulic feature of real merit—that will reduce your power costs. Usually the saving in power costs for the first year more than pays for the pump and motor. Consult with us on your pumping problems. We can show you how to save money with these truly modern pumps. Here are some of their features:

- 1 High efficiency—low power cost—long life.
- 2 Heavy-duty ball bearings—cartridge-type bearing housing—dust and splash-proof.
- 3 Centrifugally cast bronze shaft sleeves—extra deep stuffing boxes—double-wearing rings.
- 4 High-carbon alloy steel shafts—high-tensile-strength cast iron—pumps manufactured to the highest standards in a completely modern factory.

Atlanta, Ga.; Birmingham, Ala.; Charleston, W. Va.;
Knoxville, Tenn.; Houston, Texas; Dallas, Texas



SINCE 1859



GARDNER-DENVER CO., 102 Williamson St., Quincy, Ill.

GARDNER-DENVER

Baltimore and Ohio R. R. Annual Report 1935

The annual report of President Daniel Willard to the stockholders of the Baltimore & Ohio Railroad Co., showed an increase in operating revenues of \$6,334,247.97, or 4.67 per cent over 1934. Freight revenue increased 5.58 per cent, while passenger revenue declined 2.56 per cent.

The total gross operating revenues were \$141,873,643.25, with gross operating expenses \$105,464,140.17, leaving net operating revenue of \$36,409,503.08.

The physical assets of the property show an investment in road and equipment of almost \$980,000,000. Adding to this the investment in subsidiary and affiliated companies, separately operated, and all other investments, the company has total investments of \$1,176,611,000.

Operating expenses increased \$6,126,-

000, or 6.17 per cent over 1934, and total maintenance expenses increased \$2,758,000, or 6.93 per cent. Of this increase \$2,460,000 was in maintenance of equipment.

The report calls attention to the fact that in addition to the expense of handling increased traffic, the restoration of rates of pay, which were in effect prior to February 1, 1932, added approximately \$4,515,000 to operating expenses during 1935 over 1934. The pay cut of February 1, 1932 of 10 per cent has been restored in the last two years.

The company paid in Federal and state taxes an aggregate of \$7,519,000, which is 19.52 per cent of the income before taxes and is equivalent of \$2.39 on each share of capital stock outstanding.

Referring to the Railroad Retirement Act the report says that while:

"The U. S. Supreme Court in the spring of 1935 decided that the Railroad Retirement Act of 1934 was unconstitutional, another act substantially similar was approved August 29, 1935. On the same day another act was passed to levy an income tax on employees of 3½ per cent on monthly compensation not in excess of \$300 and an excise tax on carriers of 3½ per cent of the compensation not in excess of \$300 per month paid employees. The railroads have united in proceedings to test the constitutionality of this legislation."

The Social Security Act imposes an additional excise tax on the carriers covering unemployment compensation. This year the tax will be 1 per cent of total wages; in 1937 it will be 2 per cent and thereafter at the rate of 3 per cent. The constitutionality of this law has not been passed upon.

At the close of the year there were 42,389 registered holders of the company's capital stock of both classes, with an average holding of 74 shares.



FOR THE MODERN INDUSTRIAL PLANT
SCOTCH MARINE AND
FIREBOX TYPE BOILERS
by **TITUSVILLE**

See your local Titusville representative or write direct for Descriptive Bulletin 5075-R

The Titusville Iron Works Company
Division of Scruggers Wells-Titusville Corp.
Titusville, Pa.



GALVANIZING

(HOT DIPPED PROCESS)

The largest job galvanizing plant in the United States

GALVANIZED PRODUCTS FURNISHED

Joseph P. Cattie & Bros., Philadelphia, Pa.

GRANITE

WHITE MOUNT AIRY

THE NORTH CAROLINA GRANITE CORP'N.

Mount Airy, N. C.

The Development of the South

Means the

Enrichment of the Nation

Charleston Shipbuilding & Dry Dock Company

CHARLESTON, S. C.

BUILDERS OF

All Welded Ships

Marine and Stationary Boilers

Repairs to Steel and Wooden Vessels

1,500 and 600-ton Marine Railways

CANNING MACHINERY

For Fruits, Vegetables,
Seafoods, etc.

WE ARE MANUFACTURERS

— WRITE FOR CATALOG —

A. K. ROBINS & COMPANY, Inc.

BALTIMORE, MD.

FOR THEIR GREATER SERVICE
USE

SHIMER SUCCESS PLANING MACHINE KNIVES AND BITS,

Surfacing Knives and many Knives of smaller proportions for special duty in wood cutting. It will be to your advantage to look into this feature of our service. Our prices, too, are very attractive if you take in consideration their extra wear.

Samuel J. Shimer & Sons, Inc.
MILTON, PA.

1905 **Strand** 1936

FLEXIBLE SHAFT MACHINES

FOR MANY OPERATIONS
YOU CAN'T GO WRONG WITH THE STRAND

Type M 5

THEY MAKE GOOD

Type M 2

MANY TYPES AND SIZES

1/8 to 2 H.P.

HORIZONTAL

OR

VERTICAL

SEND FOR CATALOG

Manufactured By

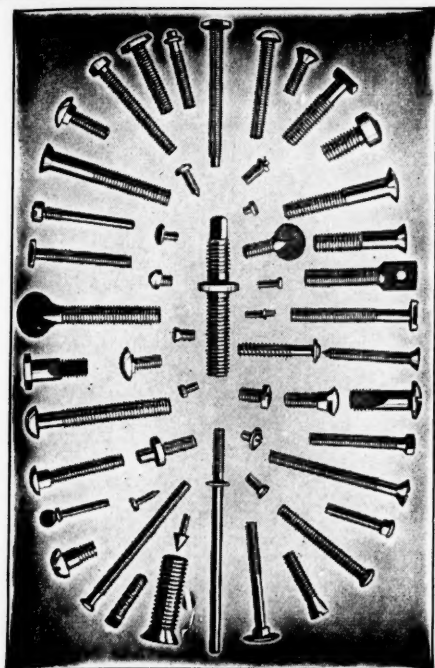
N. A. STRAND & CO.

5001-5009 N. Lincoln St.,

Chicago, Ill.



MANUFACTURERS RECORD FOR



MACHINE SCREWS SQUARE AND HEXAGON NUTS

Specialists in upset work.
Write for prices, if special submit samples
advising as to quantity required.

THE PROGRESSIVE MANUFACTURING CO.
TORRINGTON, CONN.

ALLIGATOR BELT CUTTER

TRADE MARK REG. U.S. PAT. OFFICE



You simply PUSH the knife through the belt. Makes a clean, square cut of any belt (except metal stitched) up to 8 in. wide. Combined guard and hold-down clamp holds belt immovable. Knife will make several thousand cuts and is readily replaceable. Used as illustrated or horizontally. Weight 4 lbs. and 3 ozs. net. Order through your distributor.

Sole Manufacturers
FLEXIBLE STEEL LACING CO.
4690 Lexington Street, Chicago
In England at 185 Finsbury Pavement, London, E. C. 2

FOR BELTS UP
TO 8 IN.



\$10.00
in the U.S.A.

U.S. PAT.
1,992,600



2600 Rooms in the South

Size means little to service, but twenty-five years in pleasing customers in Southern hotels, *plus size*, guarantees your satisfaction in these hotels.

• • •

Dinkler Hotels Co., Inc.,

CARLING DINKLER, Pres. and Gen. Mgr.

Operating

The Ansley, Atlanta	Andrew Jackson, Nashville
Jefferson Davis, Montgomery	The Savannah, Savannah
The St. Charles, New Orleans	The Tutwiler, Birmingham

THE OSCAR T. SMITH & SON CO.

Manufacturing

BANK AND COMMERCIAL STATIONERS

407-9-11 E. Saratoga Street
BALTIMORE, MD.

CHARACTER QUALITY
—SERVICE—

Norfolk, Virginia HOTEL FAIRFAX

Norfolk's Leading Fireproof Hotel, Attractive Rooms with twin baths \$2.50, \$3 and \$3.50

With Private Lavatory \$2.

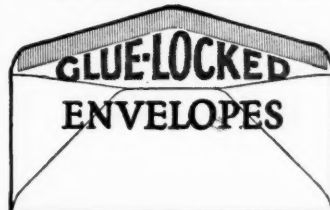
Coffee Shop Tap Room



ALSO, OPERATING HOTEL SOUTHLAND
Granby and Freeman Streets
Same Rates

ENVELOPES

Direct from Manufacturer to Consumer



PLAIN and
PRINTED
All Sizes
and Styles

OLES ENVELOPE CORP.

2510 Loch Raven Road, Baltimore, Md.
Sales Offices, Washington, D. C., Atlanta, Ga.

RESALE DEPARTMENT

MACHINERY
EQUIPMENT
SUPPLIES

Sold - Serviced - Exchanged

The items below are only a few from our large stock of rebuilt equipment. Write us for what you need.

GENERATORS

50 KW 575/480/240 V G. E. Skinner Unit
125 KW 480 V Western Electric Generator
200 KW 480 V Westinghouse Skinner Unit

ALTERNATING CURRENT MOTORS

50 HP 550 V 600 RPM General Electric
75 HP 550 V 720 RPM General Electric
100 HP 2200 V 720 RPM General Electric
125 HP 440 V 1200 RPM General Electric
150 HP 2200 V 720 RPM General Electric

TRANSFORMERS

4 10 KVA 2200/460/330 V Westinghouse
1 75 KVA 2300/480 V Westinghouse
3 100 KVA 2300/220/110 V Westinghouse

Our new branch plant at 626 Ellis St., Augusta, Ga., is now open for business. Modern recinding department, and stock of rebuilt equipment, maintained there.

ELECTRICAL EQUIPMENT CO., INC.
Richmond, Va., Raleigh N. C., Augusta, Ga.

Engine Sets (A.C.)

KVA	Make	Location
750	G. E. 30 x 34 Ames Uniflow	N.Y.
375	C. W. Ames Vertical Uniflow	N.Y.
350	Wghse.—Hamilton Corliss	N.Y.
312	Al. Chal.—Erie Ball 4 v.	Mich.
312	C.W.—Ames Uniflow	N.Y.
180	G. E.—Chuse Uniflow	Miss.
150	Wghse.—Erie Ball 4 v.	Texas
150	G. E.—Ames Uniflow	Ga.
125	G. E.—Non-Condens. Turbine	Mich.

Boiler: 300 H.P. B. & W. 200 lbs. N. Y.

400 H.P. B. & W. 200 lbs. N. Y.

Condenser: 2000 sq. ft. Worthington (Surface) Pa.

Power Plant Equipment Co., Inc.
39 Cortland Street, New York, N. Y.

MOTORS

HP.	TYPE	SPEED
600	G. E. Sl. Rg.	720
600	G. E. Sl. Rg.	252
600	G. E. Synch.	257
400	WEST. Sl. Rg.	505
400	G. E. Sl. Rg.	885
300	G. E. Sl. Rg.	575
300	AL. CH. Sl. Rg.	585
2-200	WEST. Sl. Rg.	900
200	G. E. Sl. Rg.	900
150	G. E. Sl. Rg.	870
150	G. E. Sl. Rg.	1750
100	G. E. Sl. Rg.	700
100	AL. CH. Sl. Rg.	695
100	WEST. Sl. Rg.	1160
90	G. E. Sl. Rg.	720
75	G. E. Sl. Rg.	1200

ENGINE GENER.

1-400 KVA. CR. WH.
240 V. 3 Ph., 80 Cy.
120 R.P.M. to Hamil-
ton Corliss Engine.

MOTOR GENER.

1-1000 K.W. G.E. MPC
275 V. D.C. Gen.
Conn. to 1440 H.P.
G.E. ATI 4600/2300
V. 514 R.P.M. 3 Ph.
60 Cy.
1-300 K.W. WEST. 600
V. D.C. Gen. Conn.
to 433 H.P. Syn.
motor 4600/2300 V.
3 Ph. 60 cy. 1200
R.P.M.

Above are few of our stock items

BELYEA CO., INC. 155 W. 18TH ST.
NEW YORK CITY

Gregory Hi-Grade Rebuilt

Motor & Machinery Bargains

CENTRIFUGAL PUMPS

4—American Well works Single Stage
—300 G.P.M. 110 ft. head—Direct
Connected to 20 HP Westinghouse
—3 phase 60 cycle A.C. Motors.

ARC WELDERS

200 amp. Westinghouse.
300 amp. Westinghouse.
200 amp. Gen. Elec., Dir. Conn. to
Gasoline Engine.

OIL COOLED TRANSFORMERS

KVA	Make	110/220 v. sec.	KVA	Make	110/220 v. sec.
5	Gen. Elec.	H	37½	Gen. Elec.	H
5	Westghe	S	37½	Westghe	N
20	Moloney	HE	40	Gen. Elec.	H
25	Gen. Elec.	H	50	Gen. Elec.	H
25	Westghe	N	75	Gen. Elec.	H
25	Moloney	HE	100	Gen. Elec.	H
30	Gen. Elec.	H	100	Westghe	S

SAVE MONEY — WRITE OR WIRE

GREGORY ELECTRIC CO.
1600 So. Lincoln St. Chicago

FOR SALE

300 KW Westinghouse M.G. Set 250 v. 900 RPM
compound wound with interpoles direct connected
on common base with 450 HP Westinghouse Syn.
Motor 2200 v. 3 ph. 60 cy. complete with standard
AC & DC panels.
300 HP G.E. Syn. Motor 2200 v. 3 ph. 60 cy. 640
RPM. 80% Leading P.F. 3 pedestal bearing with
direct connected exciter and starting panel.
MOORHEAD-REITMEYER CO., INC.
Columbia Bldg., Pittsburgh, Penna.

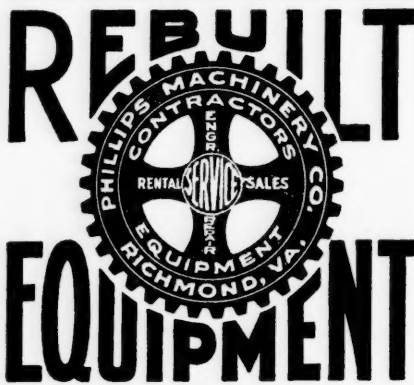
SEND FOR CATALOG

120 HP. 90 KVA Fairbanks-Morse Diesel Gen.
4-750 HP 500 KW 2300 v. Diesel Generators.
200 KW to 10,000 KW Steam Turbines.
375 KW Ridgway 2300 volt Steam Generator.
5000 ft. Direct AC Motor Drive Compressor.
200 KW Nordberg 3/60/2300 v. Uniflow.

Mississippi Valley Equipment Co.
505 Locust St., St. Louis, Mo.
Always Try Us When Buying or Selling

4-500 HP 225 lb. Pres. W.T. Boilers.
4-750 HP Busch Sulzer Diesel Units.
17 ton Link Belt K-42 Cat. Crane & Dragline.
15 ton 70 ft. Boom, stiff Legg Derrick.
365 ft. Chicago Pneumatic NSB Air Compressor.
5 ton 65 ft. Span OET Crane.
750 KW Curtis 2300 V. Turbine.
1250 KW Hamilton A.C. Uniflow Unit.
3-870 Ft. Ingersoll Rand XCB Air Compressors.
200-300-400 ton Car Wheel Presses.
2-2 yd. Bucyrus Erie Diesel Draglines.
Symons 5½ ft. and 7 ft. Cone Crushers.
Champion Model 1030 and 1040 Jaw Crushers.
5-12 & 14 ton Plymouth 36 ga. Locomotives.
Model 50 Ingersoll-Rand Drill Sharpener.
1½ yd., 2 yd., 3 yd., 5 yd. Dump Cars.
1 yd. Erie Clam Shell Bucket.
120 HP, 140 HP, 150 HP & 360 HP Diesel Engines.
150 ton 50 ft. RR Track Scale.
145 KW 3 P., 60 C., 2200 V. Skinner Eng. Gen.
50 KW 3 P., 60 C., 2300 V. Bldt. Generator.

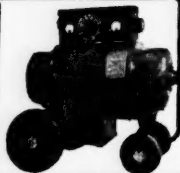
COMPLETE PLANTS BOUGHT & SOLD
R. C. STANHOPE, INC.
875-A Sixth Ave., New York, N. Y.



WE BUY AND SELL

Power Plants, D.C. and A.C. Motors, Gen-
erators, Transformers, Pumps and Elec.
Instruments. Give us the opportunity of
bidding. NOTE: We carry a diversified
stock, and your inquiries will receive im-
mediate attention. Satisfaction guaranteed.

Superior Electric Machinery Co.
253 North Third Street, Philadelphia, Pa.



WRITE FOR

ARC Welder Bargain List

The new 40 Volt type—Elec-
tric Drive, Gasoline Engine
and "Build Your Own" Gen-
erators — all at tremendous
savings.

RENT — NEW — USED
Write for catalog
Hobart Bros. Co.
Box MR-56, Troy, Ohio
Rental Division

NEW YORK CITY'S LARGEST STOCK ELECTRICAL EQUIPMENT

Wire, write or phone your requirements.
We have it in stock.

Full One Year Guarantee

L. J. LAND
Established 1910

139 Grand Street, New York, N. Y.

NEW BELTING

Cotton Woven Treated Belting

20,000 ft. NEW Belting in original
roll, sizes 30" to 2½" widths, 100 ft.
to 500 ft. lengths. Medium and Heavy
weights. Suitable for Conveyor or
Transmission. For sale at 50% of its
original manufacturing price. Send
for itemized list of sizes, quantities
and prices.

MARINE METAL & SUPPLY CO.
167 South Street New York City

MACHINERY

Hoists — Boilers — Electric Motors —
Machine Shop Equipment — Structural
Steel — We dismantle industrial plants
of all kinds. Let us have your in-
quiries.

W. M. SMITH & COMPANY
Birmingham Alabama

— TRANSFORMERS — SALES AND REPAIR SERVICE

3-600 KVA Pittsburgh Transformers, **\$965.00**
60 cycle, 6600-2200 volts. EACH

We carry a complete stock. Write for Catalog No. 131-E
All transformers guaranteed for one year.

WANTED: Transformers, burned-out or in operating condition.

THE ELECTRIC SERVICE COMPANY, Inc.
"America's Used Transformer Clearing House"
Station M. Cincinnati, Ohio



MANUFACTURERS RECORD FOR

COMPLETE POWER PLANT

2-100 KW General Electric Turbo Generators, 3600 RPM, condensing, 150 lbs., 3 phase, 60 cycle, 2300 volt, with switchboard, voltage regulator and synchronizing equipment; condensers, pumps, strainers, feed-water heater, boiler-feed pump, water purifier, 150 HP H.R.T. boiler, 72"x18", all piping and fittings as still installed on original foundations. Used 6 years. Municipal plant in southern part of Delaware. To be sold as an entirety.

METAL WORKING EQUIPMENT

LATHES—66"x38" N.B.P. motor drive, rapid traverse. 24"x12" Prentice Geared Head S. P. drive. 24"x18" Hamilton, belt drive; 22"x10" Rahn-Larmon, belt drive, quick change; 16"x6" Bradford, belt drive, quick change.
SHAPERS—16" Gould & Eberhardt, cone drive. 20" Kelly, cone drive. 7" Rhodes, belt drive.
RADIAL DRILLS—3½" Cin. Bickford, plain, S.P. drive. 3½" Morris plain radial, cone driven. 6" Mueller plain, motor drive.
PIPE MACHINES—2" Oster, motor dr. 4" Oster, belt drive. 6" Williams Rapiduction, mtr. dr.
BOLT CUTTER—1½" Landis, belt drive. 2" Acme, belt drive.
SQUARING SHEAR—8" Niagara, cap. 3/16", gap 15", belt drive.
SAW—36" Newton, motor drive, cap. 11" rounds. Racine Metal Band Saw, motor drive.
BORING MILL—No. 0 Giddings & Lewis horiz. 3-1/8" bar. 24" Bullard vert. turret belt drive.

THE O'BRIEN MACHINERY CO.

109 N. THIRD ST.

PHILADELPHIA, PA.

Contractors' Equipment FOR SALE

3-27-E PAVERS
LAKEWOOD SUB-GRADER
ORD FINISHER
5 AND 10 TON ROLLERS
12-A. B. MACK 4 YD. HYD. DUMPS
4-FORDS
CONCRETE MIXERS, PIPE, ETC.
This is thoroughly rebuilt equipment
at low prices

W. M. SMITH & COMPANY
P. O. Box 1709, Birmingham, Alabama

FOR SALE

Jaw Crushers—2" x 6" up to 66" x 84".
Crushing Rolls—12" x 12" up to 54" x 24".
Gyratory Crushers—No. 2 up to No. 12.
Swing Hammer Mills—Symonds Cone and Disc Crushers.
Rotary-fine or Pot Crushers—No. 2, No. 1, No. 1½.
Rotary Dryers—3½" x 25', 4' x 30', 5' x 30', 5½" x 40', 6' x 50', 7' x 50', 8½" x 75'.
Cement Kilns—3' x 25', up to 8' x 125'.
Hardinge, Marcy, Fuller-Lehigh, and Kent Mills.
Raymond Mills—5 roll, No. 1, No. 0 and No. 00.
Tube, Rod and Ball Mills—3½" x 8' up to 9' x 8'.
Rotary Filters—3' x 2', 6' x 6', 6' x 10', and 12' x 12'.
Dorr Classifiers and Thickeners.
Complete Asphalt Drying and Mixing Plants.
3-8' x 72" Hardinge Mills.
New Dryers built for all purposes.
Shovels—Cranes—Air Compressors, Motors.

W. P. HEINEKEN,

95 Liberty St., New York

AIR COMPRESSOR

1050 C.F.M. 18" & 11" x 14" WORTHINGTON Duplex, Two Stage, Belt Driven, 125 lbs. pressure.

**MACHINE TOOLS
ELECTRIC MOTORS and
GENERATORS
AIR COMPRESSORS
BOILERS-PUMPS**

DELTA EQUIPMENT COMPANY
148 N. 3d Street, Phila., Pa.

AIR COMPRESSORS

All makes and sizes

Remanufactured — 1 year guarantee.
35 years' experience.
AMERICAN AIR COMPRESSOR CORP.
Remanufacturing Division
556 Hamilton Ave., Brooklyn, N. Y.

FOR SALE

500 ton steel floating

DRY DOCK

H. P. GUION
303 W. 42nd St., New York City

E. C. A. Rebuilt Equipment FOR SALE OR RENT

Air Compressors	Derricks
Bins & Batches	Holsts
Boilers	Locomotives
Buckets	Mixers
Cranes	Pavers
Conveyors	Pumps
Crushers	Rollers
Draglines	Track
Graders	Tractors

Send for complete stock list.

Equipment Corp. of America

CHICAGO
1166 S. Washtenaw Ave. Phone Nevada 2400
PHILADELPHIA PITTSBURGH
P.O. Box 5419 Kingsessing P.O. Box 933
Sta. Phone Granite 7600 Phone Federal 2000.

FOR SALE

CARS

86-12 yd. Western Air or Hand
Dump Cars
12-41 ft. 50 ton Steel Flat Cars
16-40 ft. 50 ton Steel Gondolas
60-36 ft. 40 ton Wood Gondolas
80-50 ton Steel Hopper Coal Cars

EQUIPMENT

Locomotives, Cranes, Steel Sheet Piling, Refrigerator Cars, Tank Cars.

RAILS

New and Relay Rail, all weights, C/L or tonnage Lots.

HYMAN-MICHAELS CO.

20 N. Wacker Dr. Bldg.
Chicago
Railway Ex. Bldg. 101 West 31st St.
St. Louis, Mo. New York.

SPECIAL OFFERINGS

60 HP F-M type Y Vertical Oil Engine 257 RPM, shaft extension, cold starting.
15 HP GE 3 ph. 60 cy. 220 V 1200 RPM Slip Ring Motor, complete.
9x8 1-R, type ER1 Air Compressor.
40 HP Kewanee Smokeless type Boiler with Stoker.
Many other bargains. Send us your inquiry.

Cincinnati Machinery & Supply Co.
25 W. Second St. Cincinnati, Ohio

We are liquidating the Largest surplus stock best quality NEW WIRE ROPE

All sizes ¾" to 2"—Black and Galvanized—
All grades and constructions.
Write, Wire, Phone for our drastically reduced prices
DULLEN STEEL PRODUCTS, INC.
Woolworth Bldg., 534 1st Ave., So.,
233 B'way, Seattle, Wash.
New York, N. Y. Phone: Main 0030-31
Phone: Certiant 7-4676

A. S. M. E. ECONOMIC BOILERS

12—Eric City and Ames, 40 H.P. to 90 H.P., 100 lbs. and 125 lbs. pressure. Complete and guaranteed.

M. J. HUNT'S SONS

1600 N. Delaware Ave., Philadelphia, Pa.

GOOD USED EQUIPMENT

SELECTED SPECIAL ITEMS

- 4-60" BRAND NEW Tolhurst bronze basket, direct motor driven CENTRIFUGAL EXTRACTORS.
- 1-42 truck Hurricane DRYER, complete.
- 10-W. & P. MIXERS, size 30, type X, jacketed, 2650 gallons each.
- 2-W. & P. Jacketed MIXERS, size 15, heatable sigma blades.
- 2-700 gal. Duriron KETTLES, jack.
- 2-250 HP. Ames locomotive type, self contained boilers.
- 1-200 H.P. B. & W. ASME BOILER, 200#.
- 1-Triple Effect Swenson Aluminum EVAPORATOR, 570 sq. ft. per effect.
- 3-Proctor & Schwartz Automatic COTTON STOCK DRYERS, conveyor type.
- 1-S'S'x85' Ruggles-Coles class "A" double shell, direct heat ROTARY DRYER.
- 1-Devine 5'x33' ROTARY VACUUM DRYER.
- 1-Lummus 500 gal. jacketed COPPER VACUUM PAN.
- 1-U.S. No. 3 Rotary SMELTING FURNACE.
- 1-Badger 24" Copper Continuous RECTIFYING COLUMN, complete.
- 8-RAYMOND PULVERIZERS, No. 0000 to No. 3; 3-roll High Side Mill.
- 8-HARDINGE CONICAL BALL MILLS, 4½ x 16, 5 x 22, 6 x 22, 7 x 36, 7 x 48, 8' x 30'.

Latest "Consolidated News" just printed. Send for copy, listing complete stock of machinery for the Chemical and Allied Industries.

Consolidated Products Company, Inc.

16-21 Park Row, New York, N.Y.

POWER PLANT EQUIPMENT

For Sale at Bargain Prices

2 Symons ore crushers, 48" disc. Excellent Condition.
100 K.W. Allis Chalmers Belt Driven Generator.
Two 300 H.P. B&W Boilers, with stokers.
Two 250 H.P. Heine Boilers.
Large and Small Steam Engines.
Ingersoll Rand Air Compressor, Steam Driven.
D. C. motors, all sizes from ½ to 30 H.P.
ALSO 25 lb. rail, timbers, steel sash, steel stacks, structural steel and pipe—all sizes.
We solicit your personal inspection or mail inquiry.
HARRIS WRECKING COMPANY
1900 Washington Blvd., Baltimore, Maryland.

POWER PLANT EQUIPMENT

Boilers, Pumps, Feedwater Heaters.

SPECIAL PRICE FOR QUICK SALE ON
2-150 H. P. Heine water tube boilers.
2-75 H. P. HRT boilers.

BOILER ENGINEERING & SUPPLY CO.
PHOENIXVILLE, PA.

BOILERS FOR SALE

- 1-25 HP Farquhar loco. type, portable with engine, ASME, 125 lb. pressure.
 - 1-40 HP Farquhar loco. type, portable with engine, ASME, 125 lb. pressure.
 - 1-60 HP O. & S. loco. type on skids, ASME, 125 lb. pressure (only used 6 months).
 - 1-60 HP Farquhar loco. type, portable with engine, ASME, 125 lb. pressure.
 - 1-80 HP Oil City loco. type on skids, 100 lb. pressure.
 - 1-100 HP Farquhar loco. type on skids, ASME, 125 lb. pressure.
 - 1-80 HP H. R. T. 100 lb. pressure.
 - 1-150 HP H. R. T. 125 lb. pressure.
 - 12-2 to 50 HP Verticals.
- Write for details and prices
HAGERSTOWN EQUIPMENT CO., INC.
Hagerstown, Md.

GOOD USED EQUIPMENT FOR SALE

- 1—Second hand 36" Electric Lifting Magnet, Control and Motor Generator Set.
 - 1—Centrifugal Pump 4", manufactured by Swaby, belt driven.
 - 1—Centrifugal Pump 8", manufactured by Worthington, belt driven.
 - 1—Steel Building, 35' wide, 85' long, 16' columns; blue prints can be furnished on building.
 - Army Ranges suitable for contractors' camps, hotels and restaurants.
 - 1—Horse drawn fire engine with pump and boiler, in good condition.
 - All sizes and kinds Steel Tanks from 120 to 560 gallon capacity.
 - 1—"Vilter" 15 ton refrigerating machine with 15 H.P., 220 volt, 600 R.P.M. electric motor with base, pulley and starter.
 - 1—Bemet-Miles 1500 pound steam hammer.
 - 60—Steel sashes without glass, in a variety of sizes.
 - 1—Gridley Automatic Screw Machine.
- Prices and details furnished on request.

Anniston Scrap Material Co.
ANNISTON, ALABAMA
P. O. Box 1033

FOR SALE

Electric Hoist, 3 Drum, Swinging Attachments, Boom irons full set Controls.
Crank Shaft Lathe, 30" Lablond New.
Planer, Cincinnati 48"x18"x12" Box Bed 4 Heads.
Car Haul System, Link Belt, 11 Loaded Car Capacity.
Coal Bins, Steel 100 and 200 Ton Capacity.
Williams Pulverizer, No. 3 Swing Hammer Jumbo Jr.
Burton Machine Co., Inc., Norfolk, Va.

NEW-USED RECLAIMED FROM 1872
ALBERT PIPE SUPPLY CO. Inc.
Berry and North 13th St Brooklyn, N.Y.

NEW AND USED

PIPE

NEW THREADS AND COUPLINGS
GREENPOINT IRON & PIPE CO. Inc.
187-207 Maspeth Ave., Brooklyn, N. Y.

ALBERT & DAVIDSON PIPE CORP.
NEW-USED-UNTESTED
2nd Ave. 50th-51st St. EST. 1904 Brooklyn, N.Y.

PIPE

Reconditioned pipe, new threads and couplings, all sizes, 3/4 in. to 36 in., guaranteed suitable for all practical purposes.

MARINE METAL & SUPPLY CO.
167 South Street, New York City

STRUCTURAL STEEL

PIPE FITTINGS

NEW & USED

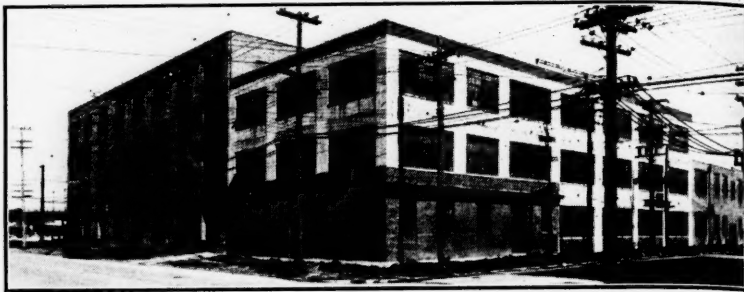
MARYLAND PIPE & STEEL CORP.

PIPE

OSTEND & SCOTT STS., BALTIMORE, MD.

VALVES

For Sale or Lease in Newport News, Va.



A solid block of newly constructed reinforced concrete and brick buildings, perfect condition, about 75,000 sq. ft. floor space with railroad siding and power plant in heart of city, with largest shipbuilding plant on Atlantic and terminus of C. & O. RR. located therein; suitable for manufacturing furniture, shoes, textiles or clothing. Plenty of labor both white and colored, male and female. Apply:

L. U. NOLAND, Owner

Newport News, Va.

MACHINE TOOLS

Lathes all sizes, Drill Presses, Planers all sizes, Milling Machines, Shapers, Punches, Presses, Air Compressors, Motors all sizes, also woodworking machinery. 200 machines in stock.

EASTERN MACHINERY CO.
112 So. Calvert St. Baltimore, Md.
Phone Cal. 0558

We are buyers, any quantity, surplus and obsolete, water damaged and salvage stocks, steel galvanized sheets, tubes, pipe, wire, wire rope, heavy hardware, etc.

Let us inspect and quote you.
Write or wire.

DULIEN STEEL PRODUCTS, INC.
233 Broadway, New York, N. Y.

FOR SALE

- 2—10' 6" Geo. A. Ohl Power Press Brakes 10 Gauge Capacity
 - 1—12' 6" Geo. A. Ohl Power Press Brakes 1/4" Capacity
 - 1—Quickwork Shear 30" Throat, 16 Gauge Capacity
- Bayard Warehouse Corp.**
208 W. Pratt St., Baltimore, Md.
Phone Plaza 7048

SPECIAL PRICED

No. 1 Vulcan Hammer, No. 2 Vulcan Hammer, Contractor's Rolling Top Saw Table, 10-ton Austin AUTOCRAT Roller without scarifier, 3 Austin-Western 77 Graders.

HOWARD W. READ CORP.
800 N. Delaware Ave., Philadelphia, Penna.

FOR SALE

- 1—Niles-Bement-Pond 10 ft. Boring Machine, can be extended to 16 ft. capacity, in splendid operating condition. Will sell for less than one-third of new price.

W. M. SMITH & COMPANY
Birmingham, Ala.



Large quantity new and used Government material in excellent condition, ready for immediate shipment. Low prices.

CENTRAL PIPE & SUPPLY CO.
Box 1099 Charleston, W. Va.

- 3—Universal Truck Cranes on Mack Trucks.
- 1—1 1/2 to 2 ton Pierce Tandem Gas Roller.
- 1—Buffalo-Springfield 10 Ton 3 wheel Steam Roller.
- 3—Ransome 2 7 E Pavers.
- Portable Air Compressors, up to 310 C. F. capacity.
- Contra. Tip Over buckets, 1 yd. and 1 1/4 yd. capacity.
- Blow Knox & Wiley Concrete Buckets 1 yd. capacity.
- Battleship buckets 2 yd. capacity.
- Round Shaft Buckets—1 1/2 yd. capacity.
- Lakewood Tower Buckets Type 814.
- Stiff leg Derricks, 15 ton capacity, complete with 50-70 ft. boom.
- Derrick Hooks, sheaves, and blocks, all sizes.
- McKiernan Terry #2 Steam pile hammers.
- Lambert 9 1/2 x 12 double drum Steam Hoisting Eng.
- Air Motor, chain, and tugger hoists, all sizes.
- Concrete and mastic mixers.
- Self-priming, diaphragm, & plunger pumps, all sizes.
- Jackhammers and paving Brakers, all sizes.
- Cameron Steam Sinking and Grout Pumps, all sizes.
- Pneumatic Clays spades, Wood borers, Steel Drills, Carving Tools, etc.
- G. E. Centrifugal Ventilating blowers with 120 H.P. motors, 7500 C.F.M. Cap.
- Reed Prentiss Electric Saw.
- Model R. Skilaws.
- Berg Model A Concrete surfacers.
- Aerol Tool Heaters.
- Penberthy Drain Pumps.

MAHONEY-CLARKE, INC.

217 PEARL ST. NEW YORK, N.Y.

WRECKING

We will purchase out-right or dismantle old and obsolete plants and buildings. Will also purchase machinery and equipment of every description. Advise us what you have.

GEORGE STEINER

1233 West Lake St., Chicago, Ill.

Subscription Salesman WANTED

To represent MANUFACTURERS RECORD and DAILY CONSTRUCTION BULLETIN in Texas and Oklahoma. Car required. Please write giving references, to

Department "S"
Manufacturers Record
Baltimore, Md.

LARGE FACTORY NEEDED AN INDUSTRIAL OPPORTUNITY

We are about to manufacture exclusive, attractive products in large and world wide demand. Cotton linters are the basic raw material required.

The factory should be located East of the Miss. river. Must be modern, fireproof, with electric power, soft water, etc. Minimum space required, 150,000 sq. ft.

The plant should be purchasable, in whole or in part, with capital stock of corporation now being organized. Owners of plant must cooperate in securing operating capital.

This enterprise is exceptionally attractive, commercially meritorious, profitable, substantial, permanent, and destined to become one of America's giant industries.

It offers a lifetime, ground floor opportunity to an experienced, dynamic executive with a suitable financial background.

Write full details in your first letter to

XYZ Care MANUFACTURERS RECORD

Industrial, Factory and Warehouse SITES

Birmingham and other points in Alabama

Convenient to railroads, water supply and hydro-electric power. Several sites with natural water supply.

Also large acreage sites in Alabama, Tennessee and Georgia.

Large industrial corporation offers its surplus properties for direct sales.

For complete information address

**LAND DEPARTMENT, P. O. Box 2634
BIRMINGHAM, ALABAMA**

Classified Opportunities

■ Florida Land

Owners of 80,000 acres of lands in North-west Florida, suitable for grazing, reforestation and game preserve, wishes to sell, in order to liquidate an estate. Property has merchantable title, all taxes paid and clear of liens and encumbrances, two paved highways, another under construction. Paper mill and stump wood plant nearby. Owners wish to deal direct with buyer, priced to sell.

WALTON LAND & TIMBER COMPANY
DeFuniak Springs, Florida

■ Patent Attorneys

PAUL B. EATON, Patent Attorney.
1406-R Johnston Bldg., Charlotte, N. C.
514 Munsey Building, Washington, D. C.
417 Wachovia Bldg., Winston-Salem, N. C.

■ Inventions for Sale

MANUFACTURERS—Write for our FREE Classification Sheet of Inventions for Sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER CO., 578 Enright, St. Louis, Mo.

■ Business Opportunities

\$8,000,000 annually leaves the South for lemons transported half way around the world. A good, thin skin, juicy, commercial size lemon, adapted to Florida growing conditions, has been developed and proved—a problem that took 20 years to solve. Advise the amount you could invest and we will submit a sound proposition offering unusual opportunities.
DESOTO NURSERIES, DeSoto City, Fla.

Capital wanted to join in manufacturing enterprise in the South with great future and earning capacity. For full particulars address J. F. B., c/o Manufacturers Record.

Old est. Truck Trailer and Spring mfg. co. has opening for young business man who can invest 10 to \$15,000 with services. W. T. S. c/o Mfrs. Record.

Experienced Builder wants able **FINANCIAL PARTNER** for General Construction business. Address Ervin Cahow, Ft. Lauderdale, Fla.

■ Position Wanted

Mechanical Engineer and Machine Designer desires a position as traveling salesman for Southern States where technical knowledge can be utilized. Have fifteen years road experience on mechanical lines. Best of references as to character, ability, and responsibility.

Address Box 625, Orlando, Fla.

■ Men Wanted

EXECUTIVE POSITIONS

Your future progress is largely dependent upon the position you occupy in the industrial world. This organization has demonstrated its ability to locate desirable salaried connections for men of ability. If you are receptive toward new and improved connections, it will be decidedly to your advantage to investigate the possibilities of this service. Your Correspondence is solicited.

EXECUTIVE PLACEMENT ASSOCIATES
415 LaFayette Building, Buffalo, N. Y.

SALARIED POSITIONS

\$2,500 to \$25,000

This thoroughly organized advertising service, of 26 years' recognized standing and reputation carries on preliminary negotiations for positions of the caliber indicated, through a procedure individualized to each client's personal requirements. Several weeks are required to negotiate and each individual must finance the moderate cost of his own campaign. Retaining fee protected by a refund provision as stipulated in our agreement. Identity is covered and, if employed, present position protected. If you have actually earned over \$2,500, send only name and address for details. R. W. Bixby, Inc., 103 Delward Bldg., Buffalo, N. Y.

WANTED—Local Representative. Laboratory tested building maintenance materials. Permanent connection. Repeat business. No investment. Commission and Bonus. Write or call nearest regional office. **UNITED LABORATORIES, INC.,** Boston, Philadelphia, Cleveland, Detroit, Chicago, St. Louis, Seattle.

WANTED AN AMBITIOUS MAN

Between the ages of 25 and 45 with business ability, good education, character and pleasing personality and who has had a successful experience in either selling or commercial work that has brought him in contact with the public.

For a man who has these qualifications there is an opening with an opportunity for advancement with a corporation that has been established in the South 27 years.

In replying, please state your age, education, actual experience, whether married or single, and any other information that will indicate your qualifications.

This is an opportunity for some man who is not a failure, but who is simply not getting ahead fast enough in his present occupation.

All communications will be treated as strictly confidential.

Write Box 2571, Birmingham, Alabama

ICE PLANTS FOR SALE

Two raw water Ice Plants, 22 ton capacity. Retail and wholesale car icing with nice oil business as side line. Business making profitable return.

Trust Department
MANATEE RIVER BANK & TRUST CO.
Bradenton, Florida

FOR SALE OR RENT

BRICK WAREHOUSE

with Brick Store adjoining. Warehouse 98' x 203' Store 26' x 82'. Well lighted with skylights and windows, and in good repair. Excellent factory, warehouse, and storage site. On railroad, and electric power line. Plenty of labor available. Write for full particulars.

P. O. Box 395, Chase City, Va.

If you want to

BUY OR SELL TIMBER

Call, Phone, Write or Wire

N. D. Suttles Jacksonville, Fla.

■ Clocks

KLOCKS FOR ALL PURPOSES

Approved Watchman's Clocks

and Time Recorders

Supplies for all makes.

L. E. Kaiser & Sons, Inc.

221 N. Liberty St., Baltimore, Md.

24 HOUR SERVICE ON REPAIRS

■ Machinery and Supplies

Dismantling extract plants—for sale—Triple effect stills or evaporators, condensers, pumps, engines, boilers, digesters, etc. Piedmont Engineering Company, Box 232, Charlottesville, Va.

■ Minerals

The mineral olivine or chrysolite for sale in car lots f. o. b. Balsam, N. C. Test: silica 38%, magnesia 49%, iron protoxide 11%. Your inquiries solicited. W. H. Silver, Canton, N. C.

PROPOSALS

Bids June 2

Proposals for Outfall Sewer System.—U. S. Engineer Office, Vicksburg, Miss.—Sealed proposals will be received here until 11 A.M., June 2, 1936, and then opened, for furnishing all labor and materials and performing all work for the construction of an Outfall Sewer System at Greenville, Mississippi. Further information on application.

INDEX FOR BUYERS

Numbers Indicate Pages Where Products Can Be Found

Adding Machines	20	Marble	70
Aluminum	23	Oil (Lubricating)	13
Architects	83	Paper Making Machinery	10
Banks	57	Perforated Metal	73
Belt Cutter	77	Piling, Poles, etc. (Creosoted)	63, 65
Belting (Chain)	84	Pipe (Cast Iron)	7, 71
Boilers	11, 76	Pipe (Clay)	70
Boxes (Paper)	57	Pipe (Steel and Iron)	80
Brick Machinery	73	Pipe Machinery (Concrete)	73
Bridges	16, 17, 71	Piping (Power)	87
Building (Steel)	63	Professional Directory	83
Canning Machinery	76	Pumps	59, 67, 72, 75
Castings	72	Railroads	26, 55
Cement	25	Real Estate (Beach & Town Property)	64
Chemicals	56	Road and Street Material	69, 70, 71
Chemists	83	Road Machinery	2, 53
Classified Opportunities	81	Roofing	61, 62, 63
Clocks	81	Rope (Wire)	15, 19, 88
Contractors	69, 83	Sand and Gravel	69, 70
Crushers	73	Scales	3
Draglines	14	Screens	73
Dredging Contractors	69	Screws and Nuts	77
Drills (Diamond & Shot)	83	Sheets (Steel Galv., etc.)	8, 49
Electric Light and Power	24	Shipbuilding	22, 76
Electric Machinery	78	Shovels (Power)	14
Engineers	69, 83	Sites (Industrial)	81, 64
Engines (Diesel, Gas and Gasoline)	74	Stationers	77
Fencing	58, 65, 71	Steel Plate Work	6, 67
Filters (Water)	67	Stone (Crushed)	71
Flexible Shaft	76	Structural Steel	16, 17, 67, 71, 86
Flooring	18, 62, 65, 67, 70	Tanks and Towers	6, 67, 83
Galvanizing	76	Tarpaulins	70
Gas	57	Telephone Service	47
Gears	72	Tractors	2, 53
Granite	45, 76	Trailers	70, 83, 86
Hotels	57, 60, 77, 80, 82	Tramrail	85
Insurance	21, 54, 60	Trucks (Motor)	4, 9, 12
Knives (Planing)	76	Turbines & Water Wheels	22, 72
Lumber (Creosoted)	63, 65	Unions (Pipe)	72
Machinery (New & 2ndHand)	78, 79, 80	Zinc Chloride	51

Agencies Wanted

Experienced salesman, 34 years of age with successful selling record, anticipates opening a sales brokerage office on the West Coast or in Texas, and is seeking through the medium of this advertisement to contact reliable manufacturers who desire representation in these particular territories, on a commission or a brokerage basis. Address No. 9338, c/o Mfrs. Record.

HOTEL SAVANNAH
300 FIREPROOF ROOMS
- 3 RESTAURANTS -
Near Everything Worthwhile in
SAVANNAH, GEORGIA.
ANDREW A. SMITH - MGR.

4 KLOEPPEL Hotels in FLORIDA
JACKSONVILLE
The **GEORGE WASHINGTON**
300 Rooms with Bath and Shower
The Wonder Hotel of the South. Radio and every known facility for first class operation.
GARAGE in direct connection with lobby.
RATES.....from \$3.00
The **MAYFLOWER**
300 Rooms with Bath and Shower
Famed for its hospitality and favored also by winter visitors and Commercial Travelers. Radio. GARAGE adjoining.
RATES.....from \$2.50
The **FLAGLER**
125 Rooms...Baths
You'll be pleased with its convenience, comfort and service. Moderate prices prevail.
GARAGE directly connected.
RATES.....from \$1.50
WEST PALM BEACH
The **GEORGE WASHINGTON**
200 Rooms with Baths and Showers
Open all the year. Radio and every modern convenience and service for summer and winter comfort.
RATES from \$3.00 GARAGE service.
★ Reasonable Rates Posted in Every Room
ROBERT KLOEPPEL MANAGEMENT

DIRECTORY

ARCHITECTS
CHEMISTS
ACCOUNTANTS

ENGINEERS
GEOLOGISTS
CHEMICAL ENGINEERS
CONTRACTORS
PATENT ATTORNEYS

ROBERT AND COMPANY, INC.

MUNICIPAL ENGINEERING

Water Supply — Sewage Disposal — Street Improvements

ATLANTA, GEORGIA

Ven-ite Company, Incorporated

Heavy Duty Cement Floors

250 SOUTH BROAD ST.

PHILADELPHIA, PA.

Batson-Cook Company

Incorporated

General Contractors

WEST POINT, GA.

Algernon Blair

Contractor

MONTGOMERY, ALA.

Fiske-Carter Construction Co.

General Contractors

GREENVILLE, S. C.

SPARTANBURG, S. C.

Poole Maynard, Ph.D.

Geological and Industrial Engineering

Established 1912

26 CAIN ST., N.W. ATLANTA, GA.

Whitman, Requardt & Smith

Engineers

Water Supply, Sewerage and Structural Engineering, Reports, Designs, Valuations.

Biddle and Charles Sts.

BALTIMORE, MD.

Wiedeman and Singleton, Inc.

(Successors to Paul H. Norcross)

Consulting Engineers

WATER WORKS, SEWERS, SEWAGE DISPOSAL, APPRAISALS, VALUATIONS, REPORTS

Candler Bldg. ATLANTA, GA.

Walker Electrical Company

Electrical Contractors

General Offices: ATLANTA, GA.

Sales Offices:

ATLANTA, GA. COLUMBUS, GA.

GREENSBORO, N. C.

McCallum Inspection Company

Inspection Engineers

Specialists in Wood Preservation

111 West Berkley Avenue,

NORFOLK, VIRGINIA

HARDAWAY CONTRACTING COMPANY

Engineers Contractors

Water Power Developments, Bridges

COLUMBUS, GEORGIA

SLAUGHTER, SAVILLE & BLACKBURN, INC.

ENGINEERS

Designs — Management — Reports — Appraisals
Power Studies

Specialists In Southern Industrial,
Chemical & Textile Plants, And
Public Utilities

Unusual Experience In Locating Southern
Industries

804 ELECTRIC BLDG.

RICHMOND, VA.

Established 1881

FROEHLING AND ROBERTSON, INC.

Inspection Engineers and Chemists

Inspection of Cement, Steel, Pipe, Timber, Brick, Tile
Design and Control of Asphalt and Concrete Mixture
Water Analysis a Specialty.

RICHMOND

NEW YORK CITY

WILEY & WILSON

Consulting Engineers

STEAM AND ELECTRIC POWER PLANTS

CENTRAL PLANT HEATING SYSTEMS

Heating and Ventilating Equipments for Public and Private Buildings

WATER SUPPLY, SEWERAGE AND SEWAGE DISPOSAL

MAIN OFFICE: LYNCHBURG, VA. BRANCH OFFICE: RICHMOND, VA.

SALMONS DREDGING CO.

MARINE CONTRACTORS

Contractors to corporate interests on the East coast of United States
and in South America

Dredging, Docks, Bridges, Salvaging and Pine Line Construction

SHIPYARD CREEK

CHARLESTON, SOUTH CAROLINA

HOOSIER ENGINEERING COMPANY

Erectors of Transmission Lines

46 SOUTH FIFTH ST., COLUMBUS, OHIO

CANADIAN HOOSIER

ENGINEERING COMPANY-LIMITED
MONTREAL, CANADA

136 LIBERTY ST.
NEW YORK

SPRAGUE and HENWOOD, INC.

CONTRACTORS FOR

Diamond Core Drilling and Wash Borings

For Buildings, Bridges, Dams and all kinds of Minerals

"ANYWHERE"

also
Manufacturers of Diamond Drills and Shot Drills

MAIN OFFICE

SCRANTON, PA., U. S. A.

Southern Drilling Company

Diamond Core Drill Contractors

Foundation Testing for Buildings, Bridges and Dams
Exploration and development of coal and mineral properties.

NORTH HOLSTON, VIRGINIA.



THE STEEL PRODUCTS CO., INC.

Savannah, Georgia

Manufacturers of

"GREAT DANE" TRAILERS

"WELD-BILT" TANKS



WE LOOK INTO THE EARTH By use of Diamond Core Drills

We test foundations for buildings, bridges and
dams. We prospect coal and mineral lands in any
part of North and South America.

PENNSYLVANIA DRILLING CO.

1201-1215 Chartiers Avenue

Pittsburgh (Elliott), Pa.

DRILLING CONTRACTORS

FREDERICK SNARE CORPORATION

Harbor Works

Bridges

Railroads

Railroad Terminals

Warehouses

CONTRACTING ENGINEERS

Difficult and unusual foundation and engineering problems a specialty

114 Liberty Street, New York

Philadelphia, Pa.; Havana, Cuba; Lima, Peru; Cartagena, Colombia

Industrial Plants

Sugar Mills

Power Plants, Dams,

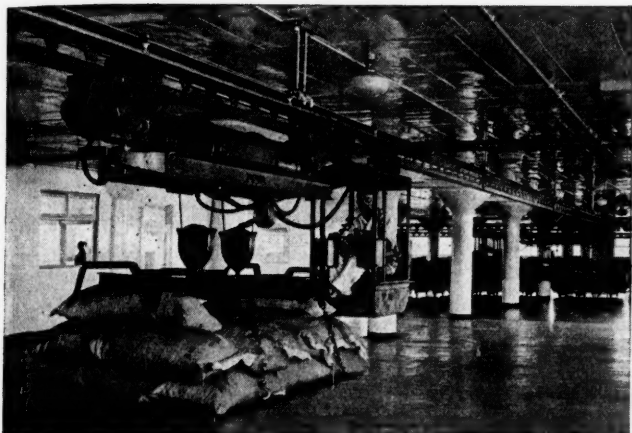
Reservoirs, Pipe Lines,

Tanks.

[illegible]

CLEVELAND TRAMRAIL

OVERHEAD MATERIALS HANDLING EQUIPMENT



At the Coca Cola Company, Baltimore, Cleveland Tramrail handles sugar within the warehouse and to the factory. Two motor operated carriers as shown above are used; they travel at 600 F. P. M. and have a lifting speed of 60 F. P. M. They are two motor drive. Each carrier can handle 350 tons of sugar in an eight hour day.

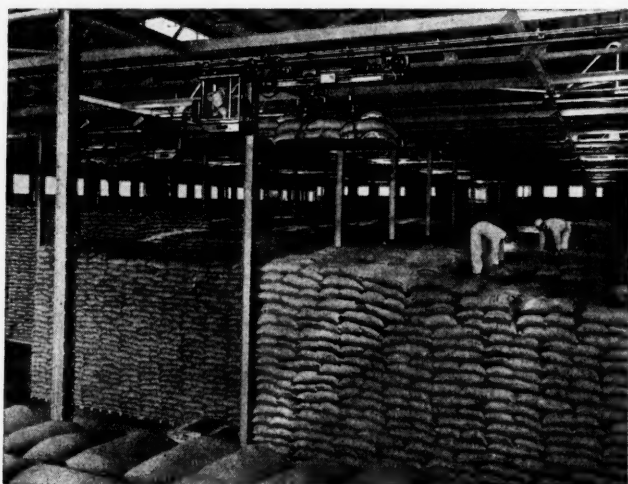


Photo 2790 - Unit loads are deposited at the proper location for systematic piling.



plays an important part at this and many, many other plants and warehouses in making it possible to accomplish results desired by management.

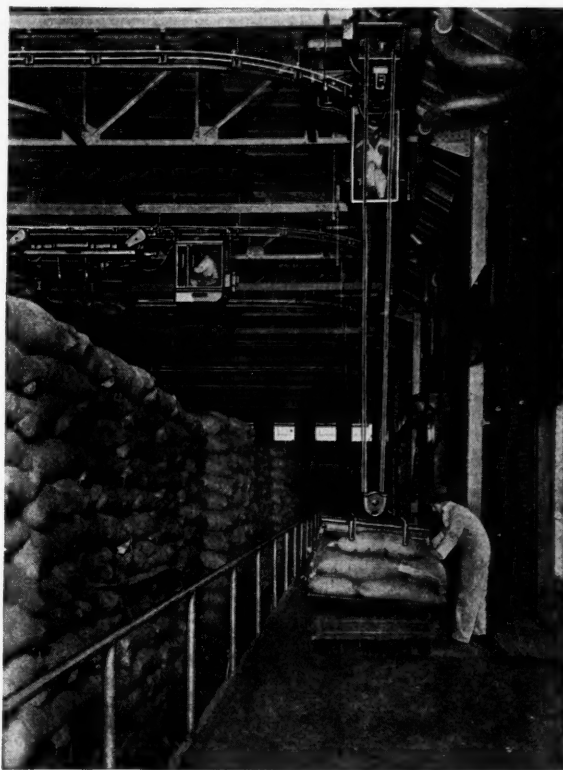


Photo 2787 - Picking up 2000 pounds (20 bags) of sugar at the warehouse door.

There is Cleveland Tramrail Equipment to suit your needs. For all industry from light hand power service requirements to high speed motor operated service requirements.

Consult your phone directory under Cleveland Tramrail



Rubber-tired Gondolas



Sanford-Day Air-Dumping Trailer
with the doors closed



Sanford-Day Air-Dumping Trailer
with the doors open

THE dumping-trailers shown on this page, patented and manufactured by Sanford-Day Iron Works, Inc., of Knoxville, Tenn., are the nearest approach yet to a coal-car on rubber tires . . . At the top is shown an automatic dumping trailer connected to a tractor. At the left is shown an air-dumping trailer, with doors open and shut . . . The heavy duty to which these trailers are subjected necessitates the sturdiest possible construction. That is why Sanford-Day Iron Works, Inc., uses Gulfsteel plates, angles, channels and bars in making these trailers . . . Send GULFSTEEL (largest Southern independent steel company) your next inquiry for steel products.

GULF STATES STEEL COMPANY
BIRMINGHAM, ALABAMA

GULFSTEEL
The Steel with **PERSONALITY**